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THE LIBRARY QUARTERLY



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THE LIBRARY QUARTERLY

A Journal of Investigation and Discussion in the Field of Library Science

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THE LIBRARY QUARTERLY

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Number 1

THE NEW ENGLAND DEPOSIT LIBRARY: ORGANIZATION AND ADMINISTRATION

FRANCIS X. DOHERTY

THE BUILDING

THE New England Deposit Library, the first tangible result of several decades of debate and discussion among American librarians on the question of how to cope intelligently with the mounting volume of literature accumulating in their libraries, is an excellent example of co-operative storage-library theory put into practice. In the construction of the building the emphasis has been on economy and utility. All features, such as a windowless stack unit, narrow aisles, extra high shelving, and a small reading-room, have been employed, and the result is a severely plain but, as is often the case in similar circumstances, extremely attractive building.

Originally it was hoped that the building or the building cost might be acquired as a gift. Keyes D. Metcalf, director of the Harvard University Library, and a moving spirit behind the group interested in the Deposit Library, approached the Carnegie Corporation and other potential donors for such funds, but he was unsuccessful. Harvard University then offered a gift of land, and, soon after the Deposit Library's authorization was

granted by the General Court, it also offered to make a loan of \$250,000 to the corporation to construct a building. Both offers were accepted, and in June, 1941, construction was started. Savings were effected in many ways, and it was possible to reduce the construction figure of \$250,000. When the building was completed, the final cost, including most of the shelving, furnace, ventilating apparatus, and other equipment, was \$212,909.54.

Actually, Harvard constructed the building and transferred it to the corporation for a mortgage of \$215,000. The \$2,090.46 difference between the note and actual cost of construction was turned over to the corporation as a working cash balance. Interest was set at 2½ per cent beginning December 31, 1941. In order to pay the principal within forty years, a combined interest and amortization figure was set at 4 per cent.

MEMBERSHIP

At no time, either in the discussion and planning period or later in the operating period, was any direct limitation placed upon membership in the New England

Deposit Library, except that the members be from nonprofit organizations. Metcalf, realizing that the nucleus of a working group could be more easily organized in and around Boston, tried to interest all libraries in this area in the storage-library plan. In 1940, after the *Proposal for a Deposit Library* was drawn up, he personally wrote to all possibly interested libraries in Massachusetts, informing them of these developments and inviting them to join. At that time only eight libraries were sufficiently interested to join.

With authorization to form a New England Deposit Library from the Massachusetts General Court, the requirements for membership have been made explicit. As set forth in the *Acts of 1941*, chapter 240, section 5, storage privileges in the New England Deposit Library may be rented by any library operated by the United States, by the Commonwealth or any other state, by any city or town, by any subdivision board or agency of the Commonwealth or any other nonprofit institution, or by any literary, educational, charitable, religious, or scientific society, corporation, association, or trust, if admitted to the use and services of the New England Deposit Library by the governing board.

Participation in the facilities and services of the library does not bring with it membership in the corporation. A two-thirds vote of all members is required to elect a representative of a new participating library as an additional member. The original members of the corporation as set forth in the 1941 Act are Dennis A. Dooley, state librarian; Milton E. Lord, director of the Boston Public Library; Elinor Gregory, librarian of the Boston Athenaeum; Allyn B. Forbes, librarian of the Massachusetts Historical Society; William J. Murphy, president of Boston

College; Daniel L. Marsh, president of Boston University; Keyes D. Metcalf, director of the Harvard University Library; William N. Seaver, librarian of Massachusetts Institute of Technology; and their respective successors in such offices. The corporation, as indicated by the above, is an association not of libraries as such but rather of representatives of the co-operating libraries, and no library can have more than one person as member representing it. Since incorporating, new libraries have joined and their representatives have been elected members. The other members, at present writing, are the representatives of Radcliffe, Simmons, and Tufts colleges (elected as members on February 17, 1942) and of Boston Medical Library (February, 1947).

ADMINISTRATION

The government and control of the New England Deposit Library are vested in a governing board consisting of seven directors. The first governing board, as specified by law, consisted of seven of the original members.¹ This board functioned until February 1, 1946, the date the law set for the first formal election. Other such elections will take place every five years.

Of the seven directors, one place is given by law to the state librarian and one to the director of the Boston Public Library. The other five are elected by the members of the corporation. The *ex officio* directors do not take part in such elections. The voting power of the members of the corporation is based on the proportionate use of the facilities and services of the Deposit Library as of November of the preceding year. However, one limitation is placed upon this,

¹ The Librarian of the Massachusetts Historical Society was the only one not designated as a director.

and that is that any one member is not entitled to more than 40 per cent of the total voting power at any election.

At its annual meeting, usually in January, the board elects a president, vice-president, treasurer, and clerk. The president and vice-president must come from the rank of directors. Membership in the corporation or connection with a participating institution as trustee, officer, librarian, or member of the faculty is a requirement for election to the board of directors. Membership in the corporation is not required of the treasurer and clerk.

Since the founding of the New England Deposit Library, the state librarian, Dennis A. Dooley, and the director of the Harvard University Library, Keyes D. Metcalf, have been elected and re-elected president and vice-president, respectively. Both are directors—one *ex officio* and the other by election. Their duties are administrative, but, as is its prerogative, the governing board has delegated some of its power to them. This assures a smoother working of the library than otherwise would be possible if all business was postponed until the annual January meeting or for a specially called meeting.²

RECEIPTS

As the library had no substantial working capital, payments for interest,

² The treasurer of the corporation since 1941 has been Roy V. Perry, the bursar of Harvard University. It has been of benefit to the corporation to have the services of a man so well qualified for this position, especially since Harvard has permitted him to work on the Deposit Library's accounts as part of his regular duties and at no cost to the library.

The clerk of the corporation is, in much the same way, ideal for the post. There have been two clerks since 1941, and both have been partners in the law firm representing the corporation in all its legal aspects. Thus the clerk has a thorough knowledge of the background, purposes, and limitations of the corporation. He is, because of this, invaluable, especially in legal technicalities.

amortization, and operating costs had to come from rents charged. It was the original hope of the corporation that the rental would be at a very low rate, but this was impossible. A charge of \$5.00 per standard library section seemed reasonable, since it constituted a cost smaller than new construction for the participating libraries separately. Since the sections were larger than the standard sections, the rentals charged were scaled accordingly. This came to \$5.50 a section for book shelves, or a double range of eighteen sections for \$100; and, as two newspaper ranges (double) covered as much floor space as three book ranges (double), the charge was greater—\$7.00 per section or \$150 per double range of twenty-two sections. The rental charge for a complete floor is \$4,500. The minimum rental is \$250, or the equivalent of two and one-half double ranges.

These rental fees are based upon two-thirds occupancy. This occupancy has been exceeded, and the building is now almost 100 per cent rented. This normally would mean the lowering of rental fees, but the opportunity to pay off the outstanding mortgage more quickly and possibly build a new unit resulted in a decision to maintain the original rental rates.

However, none of the participating libraries has found the charge to be exorbitant. In some cases, as with Boston College, the payment has been more or less a token one. Here, the main advantage is belonging to a unit that will absorb its expanding collection when its present spaces are filled. The other libraries have found that their present facilities are much too small to take care of new accessions. As a result the Deposit Library has been a solution to their difficulties. Many of them, as at Sim-

mons, have plans for building, but the costs of construction in relation to their needs at the present time make construction unwise.³ The charge of \$5.50 per section comes to about twenty-three cents a foot of shelf space, and this figure is lower than the minimum stack construction cost now would be.⁴

In another sense, the storage library has been the solution to the Boston Public Library's problems. Beyond the lack of sufficient free space, the major problem here was trying to bring about a subject reorganization of the library's de-

³ The storage library is the exact solution for the Massachusetts State Library, since it enables the State Library to stay in its present quarters, where it can serve quickly and efficiently the General Court of Massachusetts, and still expand. The library has an entire floor at the Deposit, at the cost of the yearly shifting of stacks and books at the State House.

Harvard also eliminated the need of reshifting books at the Widener Library. Heretofore, this had been done every five years at a cost of \$10,000.

The Boston Medical has a stack unit, unfinished in the sense that it lacks floors and shelving. Steel flooring and shelving at present (1948) will cost \$55,000. An elevator will cost an additional \$10,000. However, for a cost lower than a 5 per cent interest and amortization charge on the \$55,000 alone, the Boston Medical Library can rent the space equivalent to the potential stack space. Since such space could be gradually acquired, the original yearly costs would be still smaller.

⁴ "Rough estimates of the size of a stack may be made by allowing 1.5 (more exact, 1.47) cubooks per cubic foot of space, or eleven cubooks per square foot of floor space. Therefore a stack holding 750,000 cubooks would require approximately 510,204 cubic feet, and 68,181 square feet of floor area. These figures include allowances for ranges and range aisles, main aisles, stairs and elevators but not carrells" (Joseph L. Wheeler and Alfred M. Githens, *The American Public Library Building* (New York: Scribners, 1941), p. 415). Using these figures, the New England Deposit Library can store 800,000 volumes (a larger figure than 750,000 cubooks) plus about 30,000 newspaper volumes in 295,680 cubic feet (64×84×55) or with 32,256 square feet of floor area (64×84×6). A cubook is "the volume of space required to shelve the average size book in a typical library" (Robert W. Henderson, "The Cubook: a Suggested Unit for Bookstack Measurements," *Library Journal*, LIX [1934], 865-68).

partments. To carry this plan out, it was necessary to store many books. Since this was not basically a problem of limited space caused by a too rapidly expanding collection, the cost has been a net outlay.⁵

In some instances, participating libraries, such as the Massachusetts State Library, the Boston Public Library, and Harvard University contracted originally for more space than they actually needed at the time. This was done mainly to have room for the possible expansion of their storage books. On the other hand, Boston College has rented three double ranges each year without using them merely in order to share in the benefits gained by closer co-operation with the other participating libraries. In the early days of the New England Deposit Library, this rental without occupation was allowable, as the need for income was great. However, with little free space, this practice is now discouraged. The governing board also discourages libraries, especially small ones, from adding to their budgets by renting space to store material that really falls outside their obligation to preserve, such as files of the large daily newspapers which are on file in near-by libraries.

The governing board considered giving options on unused space to libraries, the cost of the option to be a fraction of the rental rates, and, in cases of actual rental, the option payment to be deducted from the actual rent. This progressed no further than the theory stage, for space open for option was not available. However, when a new unit is built, this plan might be considered if conditions are suitable.

⁵ Although one stack level of books at the Boston Public Library has been removed to the New England Deposit Library, it has not made any difference in the number of attendants needed to service the stacks. Thus no saving was realized along this line.

THE MORTGAGE

The most amazing accomplishment of the New England Deposit Library is the reduction of its mortgage note. The mortgage was originally based on \$250,000, and for this figure an interest note of $2\frac{1}{2}$ per cent and amortization on a $2\frac{1}{2}$ per cent sinking-fund basis was calculated to come to 4 per cent a year, or \$10,000. Although the actual note was only for \$215,000, the \$10,000 was allowed to stand. Thus the aim of the corporation was to pay the full \$10,000 at the end of each calendar year to cover interest and amortization of the principal in order to discharge the mortgage sooner. However, the corporation has until December 31, 1981, to discharge its debt, and, as the interest is at $2\frac{1}{2}$ per cent, smaller sums can be paid without violating the mortgage.

In 1942, \$2,506.49 was paid on the principal. A larger payment on the principal was made in 1943—\$4,881.66. The principal payment was more than tripled in 1944 by the payment of \$17,611.85. The mortgage was reduced still further in 1945 by the amount of \$15,250. Finally, in 1946, the mortgage was brought to the figure of \$158,750 by a principal payment of \$16,000.

Thus, in five years the principal of the mortgage note held by Harvard on the land, building, and equipment of the New England Deposit Library has been reduced by more than a fourth of the original amount. The estimated budget for 1947 allows for a payment of \$11,881.25, and, at this rate, the mortgage will be completely discharged in less than twenty years instead of the forty allowed by the mortgage agreement.

COSTS TO THE INDIVIDUAL LIBRARY

In storage-library theory the cost of transportation and shelving of storage

books looms large, but this study indicates that this is not completely true. Figures for transportation and shelving in the New England Deposit Library are, for the most part, nonexistent. These costs have been absorbed in larger and more general figures, and breakdowns of these figures are not available. However, discussions with the various participating libraries have produced a general idea of the costs.

With the colleges, costs have been rather modest. Most colleges have their own trucks, and the library is able to secure truck service practically at cost. The first shipments, usually made up of the bulk of the library's deposit, have been the most expensive. The cost range of the first major transportation and shelving of books is great, from about \$2,000 for Harvard University to about \$30 for Simmons College. Yet the scope of the undertaking was just about in that proportion. Some colleges, such as Radcliffe, absorb the entire cost of transportation and shelving, and the library's budget is spared this expense.

Other libraries which have had to hire private trucks and helpers found the cost much higher. Those taking advantage of the Deposit around the time of its opening found this expense not quite so great as it is now. The Boston Medical Library, for example, found that, in sending books to deposit this year, the cost of transportation and shelving was extremely high. The initial cost based upon a truck with three men at \$7.00 an hour and a truck with two men at \$5.50 an hour comes close to the actual rental fee.

In almost every library it was found that no large, added budgetary expense was incurred in the cataloging and classification program for storage books. Actually only one-half of the participating

libraries have reclassified⁶ their deposit books, and Harvard is the only one that has done storage-book cataloging to any extent.

Most libraries were able to accomplish everything without need of extra help. This was brought about both by the shortage in catalogers and by the actual lack of need for extra assistance. Some, like Radcliffe, found that it was necessary to hire extra help during the "weeding out and preparing books for deposit" period.⁷ These libraries felt that if salaries were increased, then the expense of hiring extra help would make storage-book processing rather expensive.

The one library (Harvard College Library) which did storage-book cataloging and classification on a large scale found that it actually reduced the expenses of the catalog department. The cost of cataloging a K book was found to be about one-half the usual cost, since simplified cataloging was used, and, since fewer books received full descriptive cataloging, it was possible to run the department efficiently with one-fourth fewer assistants than was formerly thought possible.

The decision not to bind or repair material going to deposit resulted in another saving at Harvard—a saving of \$2.25⁸

⁶ In the case of the libraries not reclassifying, the only need was to mark the catalog and shelf list to indicate which books were sent to storage. This task was absorbed by the regular full-time and part-time employees, and no additional outlay was involved.

⁷ Radcliffe, because of a busy school year and a shortage of permanent help, concentrates its storage-book selection, cataloging, and transportation in a period of six weeks in the summer. In sending about three thousand books to deposit in 1947, it was necessary to hire two part-time assistants at a cost of \$300 for the six-week period. Besides these assistants, some volunteer help was offered, and that eased the load.

⁸ The average cost of binding at the Harvard College Library's bindery.

on every book, which, if it had been retained at the main library, would have had to be bound. This saving, in the course of a year, amounts to several thousands of dollars and has proved so economical that plans for the future include sending more unbound volumes to Deposit, especially foreign works and dissertations.

BORROWING

There is actually no expense involved in a participating library's borrowing or returning a book to the Deposit Library. The Harvard truck has calls to make throughout the entire Boston area, and it will deliver or return a Deposit book to or from one of the participating libraries.⁹

STORAGE

There are three types of storage in use in the New England Deposit Library: (1) permanent storage of little-used books but still available for use to anyone wanting them; (2) temporary storage of books which, when conditions warrant, will be returned to the depositing library; and (3) dead storage of books not available for general use.

The greatest part of the New England Deposit Library's collection is in the first category. The largest single depositing library—Harvard College Library—considers the bulk of its deposits as more or less permanent Deposit Library material.¹⁰ Of course, this is an

⁹ The Boston Public Library and the Boston Medical Library take care of their own requests. This results in no additional expense to them, as the Deposit Library is in their daily delivery or service area.

¹⁰ However, not all the books deposited by Harvard fall in the above class. With large indoctrination classes for army and navy personnel during the war, extra space was needed for classes and living quarters. The Deposit Library was a convenient solution, and many collections, such as the Harvard Union Language Center's library, were placed there

elastic classification, for, if demand for a book is large enough, it will be returned to active circulation. The other libraries, with the exception of the Boston Public Library and the State House Library, have much the same plan in mind.

The second largest deposit in the New England Deposit Library is the Boston Public Library's temporary deposit. The Boston Public Library at present is working simultaneously on plans for a large new building and a reorganization of the departmental housing in the present main library. In order to carry out the reorganization, it was necessary to remove thousands of books to make space both for new offices and for those departments being dispossessed by other expanding departments. The new building will be ready in about ten years, and at that time the deposited books will be returned to the Boston Public Library stacks.

The Massachusetts State House Library is the third largest user of the New England Deposit Library, representing a third type of deposit. The main collection this library¹¹ has stored at the Deposit is a reserve collection of Massachusetts State documents and papers, a move made to ease the crowded conditions at the State House Library as well as a wartime security measure. To insure that a working collection of Massachusetts State documents and papers

in temporary storage. As the emergency passed, some of these temporary deposits were removed from storage. However, Harvard still has a sizable collection of such deposits in the New England Deposit Library.

The Harvard Law School also has a collection in the Deposit that amounts to dead storage. This is a gift collection of medieval legal literature, the Stollberg Collection. It has not been cataloged by the Law School yet, and, until the Law School is able to catalog these books, they will remain on deposit.

¹¹ It also has a collection of newspapers on deposit.

would be available, even though the State House was bombed, the state librarian made up a reserve collection of about five copies of every Massachusetts document for deposit. Now that the danger has passed, this collection will remain there and will be drawn on only to replace missing or worn-out copies.

TABLE 1
BREAKDOWN OF THE NEW ENGLAND DEPOSIT
LIBRARY'S BOOK COLLECTION

LIBRARY	SIZE OF COLLECTION	
	Books (Vols.)	Newspapers (Vols.)
Boston Athenaeum	1,050	981
Boston College		
Boston Public Library*	74,731	7,455
Boston University	1,745	
Boston Medical Library	4,727	
Harvard College Library†	176,084	11,000
Harvard Law School	13,601	
Harvard Business School		1,200
Massachusetts Historical Society‡	2,993	
Massachusetts Institute of Technology§	1,200	
Massachusetts State Library	12,600	1,580
Radcliffe¶	8,161	
Simmons¶	3,699	
Tufts	3,320	
Total	303,911	22,216

* This figure is based on records in the Catalog Department of the Boston Public Library.

† Harvard College Library, *Annual Report of the Catalog Department, 1946/47*.

‡ Based upon a count of the shelf-list cards at the Massachusetts Historical Society.

§ Massachusetts Institute of Technology also has sixty-three bins of architectural drawings on deposit.

¶ Figures received from Radcliffe College Library.

¶ Figures received from Simmons College Library.

The growth of the Deposit Library's collection has been gradual, the largest consistent growth having come from Harvard—about ten thousand volumes a year. The deposits of other libraries are small in comparison to the Harvard and Boston Public Library collections, but they do show a consistent increase. Table 1 lists the deposits of the participat-

ing libraries as of 1947. Many of these figures are estimates and interpolations based on a known figure, on an actual count of the collections, or on the yearly inventory of filled and empty sections. As a result, few are exact, but they are close enough to indicate the extent of the book collection stored in the New England Deposit Library.

A few minor and temporary collections, such as the Harvard Union Language Center's deposit of about 1,600 and the Harvard Philosophy Library's of about 140 have been omitted, for the fluctuation of known figures has been such that estimations for unknown were valueless.

After construction it was estimated that the New England Deposit Library had potential storage space for 800,000 books and 30,000 newspapers.¹¹ With approximately 64 per cent of all book and newspaper sections occupied in 1947, the realization of the original storage capacity has not been fulfilled. This difference was the result of various systems of shelving used by the participating libraries. If all the libraries had shelved their deposits by size, there would have been close agreement between estimated and actual storage figures.

SHELVING

More than one-half of the depositing libraries shelve their books by size. As Harvard College Library was the first participating library to use this system, and as Harvard was the first to move its storage books into the New England Deposit Library, in April and May of 1942, the other participating libraries have had an opportunity to examine this system from every angle. To five of them the ad-

vantages outweighed the disadvantages, and they adopted it¹²—Harvard, Boston Athenaeum, Massachusetts Institute of Technology, Radcliffe, Simmons, and Tufts shelve their books by size. The notations used by Harvard, Massachusetts Institute of Technology, and Simmons are the same, but those used by the Boston Athenaeum, Radcliffe, and Tufts are slightly different. Table 2 shows the classification used in shelving the books of the above libraries, although it should be pointed out that the special department collections of Harvard University are not shelved in this way.

In the use of this classification, Harvard has not lost all the benefits of its own subject classification system. A large part of its deposit is made up of a special collection of textbooks (classified by date) and a collection of nineteenth-century juvenilia (classified by date). Both of these are shelved in their original order, by their EDUC T and JUV numbers. The other main classes sent to deposit, such as directories and encyclopedias, are classified and shelved in the K classification as close to the original order as possible, and often the original book numbers are as useful as the K numbers.

The Boston Public Library still uses its own subject classification, and here all the disadvantages of storage shelving by subject classification are evident. With the attempt to keep its subject

¹¹ The failure to provide for the expansion of the KC's, KD's, etc., proved a little awkward, but it has not amounted to an outstanding problem. The real disadvantage is in three libraries (Harvard College Library, Massachusetts Institute of Technology, and Simmons) using exactly the same notation. These books have no outer library identification, and the only mark of ownership is inside the book, often just a small stamp. As a result, in shelving books returned from circulation, it is only too easy for a page to shelve one of these books in the wrong library's space.

¹² Andrew D. Osborn, "The New England Deposit Library," *College and Research Libraries*, V (1943), 21-27.

classification intact, a tremendous amount of space is wasted. Table 3, a comparison of books shelved and sections used by the Boston Public Library with those of Harvard's, illustrates this point well.

fication is wasteful for a storage-library deposit.¹³

The other libraries use their own system of classification, but, as these collections are rather small, their shelving points out no additional advantages or

TABLE 2
SIZE CLASSIFICATION IN USE IN THE NEW ENGLAND DEPOSIT LIBRARY

CLASSIFICATION				SIZE OF BOOKS (IN INCHES)
Boston Athenaeum	Radcliffe	Tufts	Harvard, M.I.T., Simmons	
ATC	RAC	TUC	KC	Up to and including 6½
ATD	RAD	TUD	KD	Over 6½ and up to 7½
ATE	RAE	TUE	KE	Over 7½ and up to 8½
ATF	RAF	TUF	KF	Over 8½ and up to 9½
ATG	RAG	TUG	KG	Over 9½ and up to 11½
ATH	RAH	TUH	KH	Over 11½ and up to 13½
ATJ	RAJ	TUJ	KJ	Over 13½ and up to 10
ATN	RAN	TUN	KN	Newspapers and books over 10
ATPC-ATPJ	RAPC-RAPJ	TUPC-TUPJ	KPC-KPJ	Poor paper, etc.
ATSC-ATSJ	RASC-RASJ	TUSC-TUSJ	KSC-KSJ	Incomplete serials

This point is emphasized if the financial difference is calculated. On the basis of \$5.50 rental per section, the approximate cost per foot of shelf space is twenty-three cents. By working out a simple problem in proportions, the 694 sections used by the Boston Public Library could house 163,154 volumes if a size classification were used. Thus, only 47 per cent of the potential housing is realized. Using a rough scale of ten books to a foot of shelving, the Boston Public Library is not utilizing \$2,033.73¹⁴ worth of necessary space per year because of the subject arrangement. A considerable part of the Boston Public Library's deposit is made up of periodicals, directories, and document files, and probably the above figure should be scaled down somewhat. However, even taking this into consideration, it is evident that subject classi-

TABLE 3

BOOKS SHELVED AND SECTIONS USED, BOSTON
PUBLIC LIBRARY AND HARVARD

Sections occupied by Boston Public Library,* September, 1947.....	694
Boston Public Library books in New England Deposit Library, September, 1947.....	74,731
Sections occupied by Harvard College Library,* September, 1947.....	749
Harvard College Library books in New England Deposit Library, September, 1947.....	176,084

* Office of the Director, Harvard University Library, *Inventory of Shelves as of January 31, 1947.*

disadvantages. The Boston Medical Library deposit is composed of practically all serials, about equal in height, plus a collection of old medical imprints fairly similar in size. The arrangement is a numerical shelf arrangement which has most of the advantages of the K classification, for books can be arranged by

¹⁴ This figure was arrived at by dividing 88,423 by 10 and multiplying the result by 23 cents (the cost per foot of book shelving).

¹⁵ It must be pointed out that the Boston Public Library intends to withdraw the bulk of its deposit as soon as its new building is completed.

size, and little shelving space is wasted. The State House Collection is small, and no attempt has been made to conserve space. Like the Boston Medical Library's deposit, that of the Massachusetts Historical Society consists of sets of serials, sets of historical works, and sets of historical registers, all of somewhat the same size. Boston University uses its own classification, and little waste space is evident, again because the books (mainly law reports) are of the same size.

The other main type of deposit is that of newspapers. The main depositors of newspapers are the Boston Athenaeum, the Boston Public Library, Harvard College Library, and the Massachusetts State Library. In the shelving of these, the Boston Public Library is the only one that follows a definite classification—its own newspaper classification. The other newspapers are shelved alphabetically by name and year of the newspaper, but the newspapers are not necessarily consecutive by years.¹⁶

Because of the different classifications used by the various libraries, a detailed stack directory was found to be essential. The need for this was found to be especially pertinent for the Harvard and the Boston Public Library collections, since both these collections are large, with many breaks in continuity.

¹⁶ Newspaper searching is made difficult by the shelves themselves. With metal newspaper shelves in mind, the section width was set at twenty-eight inches. However, with wooden shelving, this is not completely workable, as the wooden frames take too much space. As a result, many newspaper volumes are a fraction of an inch larger than the space available and have to be shelved sideways, making it impossible to read their titles. This is also expensive, as two sections are used to house newspapers meant for one section. This will be remedied when metal shelving replaces the wooden.

The elephant-size newspaper folios are shelved along the end sections of the newspaper ranges, on the center aisle. This is a good arrangement, for it allows easy reading of these titles and easy handling.

DUPLICATIONS

As yet nothing has been done about the problem of eliminating unnecessary duplication of deposited material. This problem, however, is still very much alive, and plans have progressed beyond the theory stage. Procedures for handling it have been formulated, and, although they have yet to be tested, they appear sound. The basic plan has not been followed through by all the interested libraries.¹⁷ This plan calls for each book deposited to be designated, upon deposit, as being in one of two classes—Class I or Class II. Class I books would be those books to which the depositing library would retain full title. Class II books would be those deposited with the understanding that they automatically become the property of the New England Deposit Library if they prove to be duplicates of other Class II copies deposited. The best copy of all duplicates would be selected for the New England Deposit Library collection, and the remaining copies would be disposed of by the depositing library or by the Deposit Library in the interest of the depositor. The disposition of these books would be by sale or exchange, with the financial return or exchange reverting back to the owner library. In this way, a third class of books would be housed in the library—a New England Deposit Library Collection made up of Class II duplicates.

Various plans for financing the housing of this New England Deposit Library collection have been suggested. The one most favored is payment by all libraries, based upon the use of this collection. The space occupied by these books would be charged full rental, and

¹⁷ Simmons and Boston Athenaeum are the only two of the depositing libraries that have designated any class on their catalog cards, and in both cases the designation has been Class I.

this rent would be proportioned among all libraries on the basis of the percentage of all such books borrowed from or used in the Deposit. Thus each library would pay in proportion to its use of these books.

This problem has new significance today. Practically all space in the present stack unit has been taken, and supply cannot meet the demand for space. Since some space may be acquired by the elimination of duplicates, an effort is being made to check the deposited newspapers and books to see what can be done.

SPECIALIZATION

The New England Deposit Library has not come to grips with the issue of specialization, although its total collection is fertile ground for accomplishing something important. The outstanding possibility is to combine the newspaper collections. With such a step, quite a complete collection of nineteenth- and twentieth-century American and foreign newspapers could result.

Textbooks constitute another possible specialization. One of the large class deposits of the Harvard collection is that of education textbooks. These books, in themselves, represent the history and development of educational theory and practice, and they form a collection known throughout the United States. Many students and scholars doing original research work in the field of education come every year to work with these books. The deposits of the other college libraries also have many old (and some fairly new) textbooks. Many of these would be suitable for filling in gaps in the main education textbook collection.

Again, it would be possible to form an outstanding scholarly collection of American literature, for the deposits include

large collections of minor eighteenth- and nineteenth-century American literature, especially gift books and annuals.

If steps were taken toward specialization, they might be along the above lines and not in the field of government documents, as suggested by many studies on the storage library. Many of the co-operating libraries already specialize in city, state, federal, and foreign documents. By participation in the New England Deposit Library, all co-operating libraries are brought into closer relationship, and the use of any of these special collections is open to all.¹⁸

The New England Deposit Library is not ready for co-operative purchasing. Few of the co-operating members consider successful completion of such purchasing possible, and with the tremendous concentration of libraries in Boston, each with its own specialization or specializations, the problem of co-operative purchasing is great. Little-used sets of books, often regarded as the ideal kind for co-operative purchasing, would in this region seem to be the type of thing some one of the libraries would naturally buy. If fields of specialization were marked out in the Deposit, then books or sets to complete or enlarge these collections would be bought by co-operative purchasing. No plans have been made for financing such purchases, but it is assumed that the same system will be used as in the case of duplicates.

THE UNION CATALOG

The original plan of the Deposit Library was to require every participating library to provide a main-entry catalog card to be filed in the Deposit's union catalog for each book deposited. This

¹⁸ In many of the interviews with the librarians of the participating libraries, this was listed as one of the advantages of participation.

turned out to be unfeasible, since much of the material stored was on a temporary basis. As a result, it was more or less left to the depositing library whether it wished to be represented in the catalog or not, and only one-half of the co-operating libraries provide catalog cards. Other libraries depositing temporary or reserve collections regard typing and filing such catalog cards as unnecessary work.

The cards that are now in the catalog are all main entries. Simplified cataloging has been used, and thus the catalog provides only the minimum amount of information concerning the books. The catalog proper is relatively small, some seventy drawers containing about 90,000 cards.

A shelf list was also considered for the Deposit, but, when its value was measured against the expense of typing an additional card for each book deposited, the idea was dropped. Actually some of the libraries (e.g., Harvard College Library) do not make shelf-list cards for these books even for their own use. In 1944 the Boston Public Library presented a shelf list of its first main deposit, but this has not been kept up. However, both the Boston Public Library and the Harvard College Library have provided the librarian with complete shelf lists of their newspapers.

The newspaper catalog, composed of four different indexes, is separate. Of these indexes, the Harvard College Library cards are the most usable, as they have a detailed breakdown into states, cities, towns, and counties. The Boston Athenaeum and State Library files are more general, while the Boston Public file is a shelf list and completely unusable unless the call number is provided.

The idea of duplicating the union catalog for all libraries is dormant. The demand for duplicate catalogs does not

now exist, because, as yet, the deposit collection does not supplement the co-operating libraries' special fields. The few who might like a duplicate catalog feel that the value is not worth the expense of duplicating, whatever it might be. If the Deposit ever does anything with elimination of duplicates and specialization, a need might arise, but that is far in the future.

BOOK SELECTION

Of all the eleven libraries having membership in the New England Deposit Library in March, 1942, only Harvard College Library had its selection policy so well advanced that it could make almost immediate use of its space (May, 1942). Yet, basically, Harvard's policy was similar to that used by most of the other co-operating libraries—a selection based on use. The initial selection was the result of a shelf-by-shelf examination of the stacks by a member of the catalog department to ascertain what books were not used. The only restriction on this listing was that it was not to be a piecemeal selection. The preference was for whole classes, so as to provide the space which removal by classes could give.

Harvard also sends, from time to time, a part of its current accessions. These deposits have been large because of abnormal conditions, such as the war-limited quantity of new titles and the stoppage of the foreign book-trade flow. Harvard took this opportunity to improve her collection by filling in gaps of such subject areas as that of minor American writers of the nineteenth century. A good portion of these purchases (and gifts), important only to an immense research library, was largely deposit material. Andrew D. Osborn, assistant librarian in charge of the catalog department at the Harvard College Library, estimates that

in normal times perhaps 20 per cent of current accessions will be sent to deposit.

The book-selection policy for storage of the other participating libraries has little concern with new accessions, as none of the other libraries acquires books in such large quantities. The general policy has been to select those books which, in the judgment of the librarian and other responsible people, are not expected to be used in the immediate future. As most of the co-operating libraries are college libraries, this selection has been carried on in collaboration with the faculty. The selection for the other libraries has been made by the librarian with the aid of the various department heads.

As one might expect, this selection policy has resulted in some duplicate deposits. However, because of the distinctive character of the libraries, each institution has contributed to the collection something new. Radcliffe has deposited a long file of *Chemical Abstracts* (1907-33), many books in the field of chemistry, and many textbooks on writing and public speaking. The emphasis of the Simmons' deposit is on economics and education, while the bulk of Boston University's deposit consists of sets of statutes and law reports for several states, and a file of the *Congressional Record* from 1920 to 1941. Architectural drawings make up most of Massachusetts Institute of Technology's deposit collection. Some of the most amazing deposits belong to the Harvard Law School, including, beside the Stolberg Collection of medieval law treatises, a file of French and German dissertations, a file of the *Japanese Legal News* for 1901-41, and the *Japanese Official Gazette*, 1883-1941.

The books deposited at the New England Deposit Library represent a tre-

mendous range of world knowledge and literature. Fine arts, music, and recent scientific and technological items seem to be the only outstanding omissions. Old and obsolete works are deposited, but also many important not-so-old and not-so-obsolete items, indicating that libraries having different types of users and different ideas of what the term "storage" means will produce a varied deposit collection.

Many of the participating libraries have found that their judgment about what was unwanted was fallible, yet the majority was pleased that its selection was as accurate as it was. Actually, very few books have had to be recalled. Simmons had to recall its deposited file of the *Physical Review*. The Boston Public Library has had to recall many of those in the selected group. Harvard, in 1943, recalled six hundred volumes and restored all of them to their original classification. Generally, these recalls were occasioned by some unforeseen event, as the addition of a new course or renewed interest in an old topic. An example of this occurred when the book and the movie *Anna and the King of Siam* were released, and interest was aroused in the long-forgotten memoirs of Anna Leonowens, copies of which the Boston Public Library had deposited and had to recall to meet the demand.

CATALOGING

Since Harvard is the only member of the New England Deposit Library which sends any quantity of new acquisitions to storage, it is also the only one that has had to develop a separate cataloging policy for its storage books.¹⁹ The other libraries, in weeding out their main collection, had only to make an additional

¹⁹ Susan M. Haskins, "Something New in Cataloging," *College and Research Libraries*, VI (September, 1945), 291-96, 321.

card, if any, for the Deposit Library's union catalog. This card, in most cases, is extremely simple, giving only the minimum of necessary information. This practice is also carried through when newly acquired books are sent. For example, Simmons and some of the other libraries, when sending a new acquisition—usually a gift—do full descriptive cataloging for their own catalog but only simple cataloging for the union catalog.

WHO USES THE NEW ENGLAND DEPOSIT LIBRARY

As might be expected, some limitations have been formulated regarding the general use of this collection. However, few of these limitations or rules have been tested. As yet, no working decisions have been made on any rule except the basic one that any participating library can use and borrow books from the New England Deposit Library and send patrons to use it directly, but the full significance of this borrowing has not been tested. Libraries have borrowed books, but, so far, only their own books. In general, the rules now consist of the following regulations:

1. Because of the small reading-room, the libraries were requested to borrow books rather than to send patrons to the Deposit. At first, even newspapers were borrowed, but the fragile condition of most paper resulted in the unwritten law that newspapers were not to circulate.

2. This library is open only to those with written introduction from some member-library. Standard forms have been printed, listing the name of the patron, reason for the request, name of the member-library, and the official granting the request and, on the back of the slip, the name or names of the books to be used at the New England Deposit Library. As a check, the library granting such requests notifies the Deposit Library's librarian by phone of its action.

3. All books deposited in the New England Deposit Library are available for loan to any of the member-libraries. No restrictions are placed

on the borrowing except that libraries borrowing books they do not hold title to must return the book within two days of receipt of a request for its return. If lost or damaged, the borrowing library must reimburse the owning library.

4. Books not owned by the borrowing member-library must be used in the borrowing library unless special permission is given by the Deposit's librarian for its use outside the library.

5. Requests for all loans should be phoned in by 9:30 in the morning so that the librarian can have the books ready for an 11:00 A.M. delivery by the Harvard or borrowing library's truck.

6. Interlibrary loan of any book in the collection can be granted only by permission of the owning library and according to the rules of the owning library. Books lent from the New England Deposit Library on interlibrary loan must be used in the borrowing library and are loaned only for a two-week period.

7. Mailing and insurance costs of interlibrary loans are to be paid by the borrowing library or the owning library, in accordance with directions from the owning library.

USE OF THE COLLECTION AT THE NEW ENGLAND DEPOSIT LIBRARY

The collection has been used to some extent by patrons directly. The librarian at the New England Deposit Library has kept a file of all the cards of introduction, and an analysis of these cards gives a picture of how the library has been directly utilized in the last five years. The picture, however, is not complete, for many of the cards are not thoroughly filled out.

Since March, 1942, four hundred and two persons have used the Deposit Library. This figure is broken down into use by individual member-libraries in Table 4.

Ninety-five per cent of all requests were for newspapers. The range of papers requested covered the entire field of American and foreign newspapers. For the most part, the requests were for specific newspapers, such as the *New York Herald Tribune*, 1941-42, the *Wall Street*

Journal, 1930, *Le Figaro*, 1850, and the *Frankfurter Zeitung*, 1920. A few requests were worded "To examine various newspapers" or "To work with nineteenth-century Boston newspapers." At times, the librarian was directed by the introducing library to allow the user full use of any additional material that he might need. The remainder of the requests were for periodicals, directories, and fairly long lists of books. As above, most of the requests were for such definite items as for the *Congressional Directory* for 1889 and the Dartmouth College Catalog for 1943.

The majority of these users were motivated by research. The Harvard group was made up of 80 per cent graduate students, 10 per cent professors, and 10 per cent visitors, nonstudent researchers, and staff members. The Boston Public Library's were of a similar pattern. Ninety-five per cent were students and other patrons. The remaining 5 per cent were visitors interested in the storage-library theory and anxious to see an actual one in operation.

USE OF THE COLLECTION THROUGH BORROWING

The storage library has a file of all canceled and current requests. Each request slip should contain the title and author of the book wanted as well as the borrower's name and status, but much of this information is lacking. Yet, in spite of the incompleteness, a rough analysis of the titles borrowed discloses a broad pattern of use.²⁰ These files indicate also

²⁰ In the period of March 1, 1942, to September 26, 1947, the New England Deposit Library made a loan of 6,230 titles. Many of these included several or more volumes, and a conservative estimate of total volumes consulted would be 30,000 volumes. In contrast, the circulation for the Harvard College Library for approximately the same period was 1,202,524 (*Report of the President of Harvard College and Reports of Departments* [Cambridge, Mass.:

that a single title is seldom called for more than once and that, when it is, it is recalled usually by the same person. The two major borrowers are Harvard College Library and the Boston Public Library. The other member-libraries seldom withdraw any items.

Since 1947 has been a normal year in most respects, 1947 circulation figures for the Harvard College Library and the Boston Public Library were examined more closely. The period of January 2, 1947, to September 25, 1947, was selected also because this is the only period for

TABLE 4
USE OF NEW ENGLAND DEPOSIT LIBRARY
BY PATRONS OF CO-OPERATING
LIBRARIES

Library	Number of Users	Per Cent
Harvard College Library...	272	67.0
Boston Public Library.....	102	26.0
Harvard School of Business	18	4.5
Boston Athenaeum.....	5	1.5
Tufts.....	3	0.5
Radcliffe.....	2	0.5
Total.....	402	100.0

which the Boston Public Library has kept a file of its requests. Harvard College Library has a complete record from July 1, 1946, to date.²¹ These are complete in that they give borrower's name, date received and date returned, call number,²² and disposition, but no indica-

Harvard College, 1941/42-1947]) and for the Boston Public Library, 15,638,421 (*Annual Report of the Trustees of the Public Library of the City of Boston* [Boston: Boston Public Library, 1942-47]).

²¹ Harvard does have another file of canceled request slips from March, 1942, through December, 1946, but this file has large gaps. An estimation of its number is about 1,500. This 1,500 figure as set against the actual 4,147 plus, indicates its unreliability as a basis for any complete analysis. Also, it has the same lacks in important information as in the other files.

²² Author and titles should be given also, but these items are lacking for many of the requests.

tion is made of the status of the borrower or the reason for the request.

The analysis of subject fields requested, as shown in Table 5, follows the general pattern of the Harvard College Library's storage-book circulation from March, 1942, through September, 1947. As in the other years, fiction and periodicals constituted the largest part of the circulation; literature and periodicals made up 56.4 per cent of the entire cir-

TABLE 5

SUBJECT BREAKDOWN OF BOOKS BORROWED BY THE HARVARD COLLEGE LIBRARY, JANUARY THROUGH SEPTEMBER, 1947	
Class	Breakdown Percentage
Periodicals, newspapers, directories, and general works	24.3
Philosophy	6.8
Religion	3.7
Social science and educa- tion	7.7
Philology	1.5
Pure science	2.6
Useful arts	2.8
Fine arts and recreation . .	1.0
Literature	38.7
History, travel, and biog- raphy	10.9
Total	100.0

ulation. The only titles showing concentration in point of time were the Latin and Greek classics. These were called for from September through June but not at all in the summer months. The other classes were used fairly evenly throughout the year.

The books represented by these figures were of all kinds, good and bad. The fiction was generally of second-rate status, such as *The Hidden Hand* by Southworth and *Alice of Old Vincennes* by Thompson. Mill's *Utilitarianism* was representative of the philosophy titles borrowed, but books like Cannon's

Sleeping through Space were also prominent. Literature ranged from Chaucer to Gide. The most popular periodicals were the *Overland Monthly*, the *Antiquary*, the *Eclectic*, the *Catholic World*, and *Die neue Zeit*. Most of the religious books fell in the inspirational class. In general, the science and medical books were old and obsolete, usually with a late-nineteenth-century imprint. The history section was general, with everything from Gibbon's *Decline and Fall of the Roman Empire* to Macaulay's *History of England*.

In examining the request slips records, it was noted that many titles, especially fiction, were borrowed by one person. Thus the number of persons actually using the Deposit collection was fairly small, and, of the users, the majority were graduate students. The professors, staff, department libraries, and interlibrary loans accounted for about 20 per cent of the borrowing. About 80 per cent of the titles were charged out by graduate students. These are merely estimates based on an analysis of the incomplete 1942-46 canceled request files,²³ but it seems logical to assume that the same proportion still holds.

The Boston Public Library's storage-book circulation is not typical of a storage-library circulation, since the Boston Public Library's deposit is actually temporary. Only certain topics were touched upon, because there was no general pattern covering the entire field of knowledge. Fifty per cent of its circulation—based on 259 titles—consists of books in or relating to medicine. These books were, for the most part, extremely old, but they did receive a certain amount of use from the near-by Boston University Medical School. Often these books were called for without the borrower realizing how old and obsolete they really were

²³ See above, n. 21.

and without the borrower really wanting them.²⁴ The borrower had not read the catalog card completely or did not know how to interpret the information found thereon. The other large class of books borrowed from the Deposit was made up of government documents. These ranged from *British Parliamentary Papers* for 1927, to *Virginia, Statutes at Large*, 1619-1792.

Of these books, 78 per cent were borrowed by the patrons of the Boston Public Library. Thirteen per cent were for interlibrary loans and 9 per cent were recalled by the staff for recataloging, for use in a special exhibit, or for use in some department. During this period the Boston Public Library issued thirty-nine special permits to use this collection at the New England Deposit Library. Twenty-nine of these requests were for newspapers, ranging from the *Essex Gazette*, 1934, to the *Jewish Advocate*, 1946. The other ten requests were for government documents and books on medicine. Twenty-four of these permits were issued to Bostonians, mainly students, and fifteen were to people outside Boston, living in places as widely scattered as Providence, Rhode Island, and Denver, Colorado.

CONCLUSIONS

The New England Deposit Library has been successful in relieving the overcrowded stack conditions of the participating Boston libraries. All the members are convinced that the rates are reasonable and, with full utilization of space, most economical. The finer points of shelving techniques have been left open,

and each participating library has used its own system. However, the size-classification shelving system seems to have overwhelming advantages in comparison to the subject-classification system for storage purposes.

The possible confusion and loss to the major collection of the depositing library, in terms of demand for storage books, has not been realized. Although several systems of classification are used, little difficulty has resulted. This is a result both of good selection policies—which means that

TABLE 6

SUBJECT BREAKDOWN OF BOOKS
BORROWED BY THE BOSTON
PUBLIC LIBRARY, JANUARY
THROUGH SEPTEMBER, 1947

Class	Breakdown Percentage
Periodicals, newspapers, and society reports.....	12.0
Government documents and college catalogs....	20.3
Technology.....	3.8
Medicine.....	49.9
Literature.....	11.0
History, travel, and biog- raphy.....	3.0
Total.....	100.0

few books circulate—and the organization of the different collections so that each has its definite place and can be easily located by a stack guide. Furthermore, because of its central location, there is no great delay between request and delivery.²⁵

The collection, as a whole, is sufficient testimony to the value of such a library. The mere scanning of the shelves of the permanent storage collection is enough to convince one of the live possibilities of these so-called "dead books." Thus, this library proves that it has a definite place

²⁴ This has been a common experience at both the Boston Public Library and the Harvard College Library. Many of the requests have actually been for books not wanted. This is another argument for weeding out the catalog to make it more serviceable for the general user.

²⁵ Even if the services of the library were extended throughout New England—and it is still the hope of the founders that it will be—no unusual delay should follow with the excellent mail and train service to all the cities and towns in this area.

for those unused books which overcrowd stacks and slow down operation, but which still have potential use.

However, beyond the storing of books, the Deposit Library has accomplished little. It has made no inroads toward the elimination of duplication or toward increasing library specialization. In both these fields the opportunity is large. With a return to normal operating conditions, the Deposit's librarian can now make a beginning on the tentative elimination of duplication. The deposits of textbooks, newspapers, directories, encyclopedias, and registers are sufficient to justify work along these lines.

The opportunity for specialization in the field of textbooks, newspapers, and minor American literature is excellent. The ideal subject to begin with is the newspaper collection. The newspaper files are in bad condition, badly arranged, and badly shelved. A job of arranging them in some kind of logical order and of reshelving them in order to preserve them better is necessary, and the job of consolidation and elimination could be accomplished at the same time. The pertinent problem of whether or not to microfilm the disintegrating wood-pulp newspapers would have to be faced, and possibly some kind of co-operative scheme could be worked out.²⁶

Another possible feature of the storage library—that of a complete union catalog containing all deposits—has been neglected to some extent by the member-libraries. However, in view of the various types of deposit—permanent, seasonal, and temporary—such a catalog is not too useful or practical. The extension of the union-catalog plan into duplication copies of the catalog, one for each mem-

ber, has been ruled out because of its slight value.

The New England Deposit Library has been an experimental undertaking, and its great success can be attributed to a number of reasons. In the first place, it is located in the midst of a strongly concentrated library area. Second, it received unexpected rentals,²⁷ making it possible to reduce its mortgage more quickly. The main reason would seem to be that such a library was needed, and because of that its success was certain. Yet, in examining this success, another important fact stands out—that, although it is in every sense a co-operative project, it has been developed, operated, and kept going by one man.

This man is Keyes DeWitt Metcalf, who did most of the groundwork in the preparation and formation of the Deposit and who, since its opening, has been the overseer of its operation. The slightest examination of the background and workings of the New England Deposit Library shows that his skill, knowledge, and patience had a great influence on its success.

Plans are now being made for a new unit, but actual construction in the near future is doubtful. Both Harvard and the Massachusetts State Library need more room, and several of the other libraries, including Boston University, spoke of the possible storage of more books if space were available. However, construction costs have doubled the 1941 figures, and even an additional unit needing only three walls would probably cost more than the present library. Thus, further construction will probably be delayed until more normal times.

²⁷ The Deposit was the site of a National Defense Research Council project (1942-46), and the income from this rental was considerable. As it was an ideal bomb shelter, it consented during the war years to rent space for the storage of certain museum pieces, another source of income.

²⁶ Harvard, the Boston Public Library, and the Massachusetts State Library are now considering the possibility of co-operatively microfilming foreign, Boston, and Massachusetts newspapers.

CHARACTERISTICS OF THE RESEARCH LITERATURE USED BY CHEMISTS AND PHYSICISTS IN THE UNITED STATES

HERMAN H. FUSSLER

INTRODUCTION

IN A PAPER read before the Library Institute in 1936, William F. Ogburn called the attention of librarians to "the increase in the volume of knowledge." Ogburn commented as follows:

There is some evidence to indicate that knowledge grows according to the exponential law . . . the slang expression for it is "the compound interest law." . . . The increase . . . is not a straight line going up, but a curved line growing by increasingly large amounts. . . . It seems to me that the task of librarians in relation to the volume of knowledge is a very great one.¹

Knowledge, in the sense used by Ogburn, is intimately related to research. The increasing growth and complexities of research libraries are natural consequences of the growth of knowledge and the increasing complexity of knowledge. Librarians have tried to amass more and more knowledge in the form of books for the benefit of the diverse interests of their clientele. Their success in this activity has been reflected in the increasing difficulties of identifying satisfactorily what they have. The processes of cataloging, classifying, and related technical routines have become increasingly complex and expensive. The processes are of such a nature that the cost for adding each new item to a large library is, on the average, potentially if not actually, higher than that for its predecessor. The total proportion of the budgets of large research libraries that is spent for the

processing of material, as distinguished from the costs of its purchase or its direct servicing, is now such as to give librarians pause for fear a day may come when nearly all the money available to large libraries will be spent in processing material, and little will be left to service the collection or to buy new books!

Not only is processing difficult and expensive but libraries are even more embarrassed by their constant lack of space. Buildings erected for a half-century's use are crowded in ten or twelve years and completely obsolete in twenty. Planners have obviously been reluctant to apply exponential laws in planning for the growth of the book stock.

Most research libraries, despite their large expenditures for processing and new buildings, are not completely satisfactory either to their users or to their librarians. Books are arranged by fairly rigid subject-classification schedules, many parts of which no longer reflect modern knowledge accurately, so that users are inconvenienced by the arrangements, and catalogers are constantly forced to devise minor modifications and to recatalog parts of the collections.

Yet the reverence for size continues. The library that has the most books is likely to be regarded as, *ipso facto*, the best. Since organizations with any tendency to grow exponentially must inevitably have increases of enormous and unmanageable proportions in the course of time, indefinite growth cannot continue as a virtue.

The growth of knowledge also produces changes in subject relationships.

¹ W. F. Ogburn, "Recent Social Trends," *Library Trends*, ed. by L. R. Wilson (Chicago: University of Chicago Press, 1937), p. 2.

The modern evolution of such sciences as biophysics, biochemistry, and relationships such as those that now exist between sociology, law, and psychiatry, for example, reflect an instability in the use of research literature that may some day conflict, if it does not already do so, with the present systems of library classification or the departmental organization of large university libraries.

These are merely a few of the many basic problems faced by modern research libraries. Realistic answers are not patent. Nor may they be found from a superficial examination of existing libraries or an opinion poll of working librarians. On the contrary, relevant evidence upon many of them must be sought through careful observation of the actual literature requirements of research personnel in various disciplines. Accordingly, this study is an effort to ascertain some of the more fundamental characteristics of the literature used by research personnel of the United States in two related subject fields—chemistry and physics. While these are only two of many fields, they bear a current intrinsic importance, and they offer an opportunity for the application of techniques that may be useful in securing answers concerning the characteristics of the required literatures of other subject fields. The answers to these questions should in turn influence the size, subject distribution, book-selection policy, internal arrangement, and other aspects of working libraries.

GENERAL METHODS AND OBJECTIVES

The immediate objectives of this study were, therefore, to determine for the research literature used in the United States in "pure" chemistry and physics:

1. The importance of the literature of various subject fields to chemistry and physics.
2. The temporal span of this literature, especially that between the date of an original publication and the date at which it is known to have been used.
3. The principal forms of the literature used and their relative importance.
4. The national origins of the literature used in the United States.
5. The more important serial titles for each field.

Absolute knowledge about most of the various factors outlined above is relatively valueless unless there are statistical or other norms available for purposes of comparison. The absence of such norms made the simultaneous treatment of two closely related subjects desirable. Chemistry and physics, being both active and basic sciences, were regarded as suitable disciplines for analysis. To facilitate further interpretation, especially as to the extent of change that might be anticipated, it was also desirable to compare the changes in the factors outlined above for these two basic sciences over a reasonable period of time.

The beginning of the century was the first convenient date for analysis, since it followed closely the establishment of the first purely physical journal in this country (1893) and preceded the active scientific development subsequent to the first World War. To establish a uniform interval and at the same time to avoid war years, 1899 was the first sample year selected. Using a twenty-year interval, the succeeding periods were 1919 and 1939. Because of the curtailment of scientific publication during and following World War II and the difficulties in the international exchange of scientific literature, any postwar sampling would be inconsistent with comparable pre-war results and presumably would not compare with "normal" postwar publication once that pattern has been established. For these reasons a small sample in 1946

was attempted only for purposes of casual comparison. Since this sample is smaller and less representative in its sources, it is less reliable than the complete samples for the earlier periods.

One of the most difficult initial problems was to work out an adequate definition of a subject field. A chemist may at some point make use of literature from almost any other field. Therefore, what literature can be regarded as "proper" for analyzing "chemistry" or "physics" in general? The petroleum chemist will presumably use a chemical literature that is quite different from that used by a chemist working in the field of nutrition. The difficulty rests in determining the body of literature used by chemists or by physicists in general.

The following were among the various possibilities considered. The abstract journals, particularly *Chemical Abstracts*, cover most if not all the relevant literature, and the abstracts themselves might, therefore, be suitable for a statistical analysis of the desired nature; but an analysis of abstracts would be quite unsatisfactory for our purposes for three reasons. *Chemical Abstracts* does not reflect use of literature by chemists but publication, only part of which is by chemists. Second, it is not selective in terms of excellence, since abstracting journals must include all relevant items within reason, and each item will usually appear only once. Finally, much of the abstract journal's contents are not of a research character.

An analysis of the literature citations in the serial holdings of selected strong libraries in each subject field was considered. This method was rejected because of the difficulty of applying it at different periods of time and because libraries may hold titles that are not used and lack titles that would be used if held.

A list of selected leading journals in physics and chemistry could have been prepared and this list submitted to experts in chemistry and physics for their appraisal as to the more important journals at various periods in time. This method has the handicaps that are commonly associated with personal appraisals, even by experts. There is inevitably some personal and environmental bias, so that a fairly large number of experts would have been required to secure a reasonably objective appraisal. The method would have been virtually impossible of application to foreign literatures, and the extension of the method over any long period of time would have been impossible.

Since research in chemistry and physics is the work of individuals and the study was intended to investigate trends in the use of scientific literature, a personal approach to the problem was considered. Various lists of outstanding scientists are available, and a sampling of the names of men contained in these lists working in the fields of chemistry or physics could have been established. Articles written by these men could have been examined, and the literature used in their own research could thus have been analyzed as representative of all research literature for the field. However, a list of men derived from such lists as *American Men of Science* or the rosters of members of the National Academy of Sciences might not be typical of the producers of research in general. Furthermore, an application of this method to a long period of time, or to foreign literature, or to disciplines where suitable lists of personnel were not available made it unsuitable also.

In recent years a number of analyses of research literature have been made by listing the references contained in one or

a group of important journals in the field to be surveyed. Various considerations suggested that the adoption of this technique or some modification of it would yield the most useful sample of the general research literature for chemistry and physics.

In considering various methods of establishing the research literature for a field, certain criteria for the method have been evolved or considered. The more important of these criteria require that the literature selected should be reasonably representative of research and of the discipline as a whole; that the method should be as free as possible of arbitrary assumptions or decisions and should be equally applicable to the literature at different periods; and that it should be equally applicable within reasonable limits to other subject fields and to the literature of other countries.

Since almost all contemporary research in chemistry and physics is first published in journal form, the analysis of the references contained in a dominant journal met most of the conditions imposed by our criteria. A single journal, however, might or might not adequately cover the literature of a field, i.e., it might not be sufficiently representative of the whole area. Any one journal is subject to important editorial changes in policy and must, of necessity, represent in part the views of its editor. Furthermore, contemporary chemistry and physics are very large subjects, and the increasing number of special journals in the field have tended to produce a diversification in journal content that might not have been true during an earlier period. For these reasons a single journal, even if dominant in character, might not show the true degree of subject diversification, especially over a long period. Although the source journal was merely

to supply the citations or references to be analyzed, it was clear that these citations would reflect the character of the source journal. Therefore, the selection of the source journal was a critically basic point in determining the character of the literature representing the field.

SOURCES AND SAMPLING

The method finally adopted consisted, first, in the arbitrary selection of a "key" journal for physics and another for chemistry—the *Physical Review* and the *Journal of the American Chemical Society*. Since both were official publications of the major national professional societies, their character was thought to be sufficiently general to warrant their use as "keys" to their respective literatures. The serial references in each of these journals were then listed for each of the main periods 1899, 1919, and 1939. This analysis consisted of a carefully random sampling of the citations contained in the research portions of the journals. These citations were then arranged in the order of the frequency of citation to individual serial titles. From these frequency lists of titles, a group of additional journals falling, according to the Library of Congress subject classification, in physics or in chemistry were also selected for the analysis described below. The entire group of journals identified by this procedure are defined as the "source" journals, and the citations contained in them have been sampled and analyzed, for the purposes of this study, as though the group of journals for any one sample period and subject had constituted only one journal.

In taking the citations, it was necessary to establish certain uniform rules of procedure. Among the more important of these was the necessity for establishing a random method of sampling. In those

journals where the citations were scattered through the text or in footnotes, the usual procedure was to take all citations on every n th page. All pages ending in certain digits, which were changed from journal to journal, were included to produce the necessary number of citations. Where references were contained at the ends of articles, they were sampled by taking every n th citation throughout the volume.

An attempt was made to omit duplicate references from a single article. It is possible that all such duplicate references were not excluded, but, wherever it was possible to identify them as duplicates, only the first citation from any one article was included. Wherever, for example, a reference without title or author was made within a single article to the same journal for the same date and within ten pages of a previous citation, the second reference was omitted. Duplicate references to monographic publications, even where different pages were involved, were also listed only once.

In order to handle the countries of publication without establishing too many different categories, certain arbitrary groupings were made as follows: Germany, Austria, and Hungary were treated as a unit and will be mentioned throughout the study as "Germany"; the same is true of England, Scotland, and Ireland, all of which are referred to under the heading of "Great Britain"; Australia and New Zealand were grouped; Russia and Poland were grouped under "Russia"; and a "Scandinavian" group included Finland, Denmark, Iceland, Norway, and Sweden.

A further simplification was made in certain of the title lists by consolidating the entry for various series or title changes, especially those of the learned societies, under the most recent or the

most common title. This consolidation occurs only where the subject classifications of the different portions of the series were the same.

All items not actually published were omitted. This meant that references to private communications, to articles in proof, and to certain war-research reports were not included. Their omission was justified, first, because adequate information about them in many instances could not be obtained and, furthermore, because a user of the literature other than the author would not have had access to the information in a printed source at the time it was cited.

Finally, all references from the non-research portions of the journals were omitted. This included those references contained in "Notes" or "Letters to the Editor" sections, book reviews, and abstracts of papers presented at meetings. The latter were omitted on the assumption that in a large number of cases the papers reported in abstract form are later printed in full in either the source journal or in some other suitable publication.

Having established the key journals, the periods to be analyzed, and the procedure for listing and sampling the references, a preliminary sample of serial references was taken from each key journal for each period except 1946. This preliminary sample included about four hundred or more references. The references obtained were arranged in the order of the frequency of citation to each serial title. Within the group of titles composing 90 per cent of the references, beginning with the most-cited title, all additional titles were selected as source journals for chemistry that were classified in chemistry (QD), that were published in the United States, that were not of an abstracting character, and that were be-

ing published at the time of the sample period. The procedure was the same for selecting the physics source journals except that only journals classifying in physics (QC) were used.

The source journals selected in this way are shown in Tables 1 and 2. In the analysis the key journals were, of course, included among the source journals. In 1946 only the key journals have been analyzed because publication, especially

in physics, was still well below pre-war bulk and because the international exchange of scientific literature was still curtailed.

The preliminary sample when applied to *Physical Review* for 1899 produced no other title published in the United States which was classified by the Library of Congress in physics (QC) and which was within the first 90 per cent of the references. Therefore, the *Physical Review* be-

TABLE 1
SOURCE JOURNALS IN CHEMISTRY

Title	Preliminary Estimate of Number of References	Percentage Basis Used for Sampling	Actual Number of References Secured for Sample
1899			
*American Chemical Society. <i>Journal</i>	725	60	534
<i>Journal of Physical Chemistry</i>	367	60	224
<i>American Chemical Journal</i>	900	60	531
Total.....	1,992	60	1,289
1919			
*American Chemical Society. <i>Journal</i>	3,100	33	879
<i>Journal of Physical Chemistry</i>	770	33	273
Total.....	3,870	33	1,152
1939			
*American Chemical Society. <i>Journal</i>	11,500	6	662
<i>Chemical Reviews</i>	2,214	6	154
<i>Journal of Chemical Physics</i>	2,700	6	179
<i>Journal of Physical Chemistry</i>	1,500	6	93
<i>Journal of Organic Chemistry</i>	1,224	6	73
<i>Organic Synthesis</i>	170	6	10
Total.....	19,308	6	1,171
1946			
*American Chemical Society. <i>Journal</i>	11,000	6	606

* "Key" journal.

came not only the key journal but the source journal for 1899.

The number of references for most periods was so large that a sampling method was highly desirable. Since the study was concerned primarily with individual uses of literature, the most suitable sampling base was the single reference. A preliminary test analysis of the subject distribution of the references indicated that the scattering would not be very great, for the references tended to con-

centrate in a few fields. Therefore, the sample had to be only sufficiently large to give statistically significant measures for purposes of comparing the subject distributions in different periods. The distribution pattern of the test analysis indicated that a sample of about one thousand references would probably be adequate. To insure a margin of safety in the sampling method, it was concluded that the proportion for each sample should be calculated to secure about

TABLE 2
SOURCE JOURNALS IN PHYSICS

Title	Preliminary Estimate of Number of References	Percentage Basis Used for Sampling	Actual Number of References Secured for Sample
1899			
* <i>Physical Review</i> (1899)	243	100	243
<i>Physical Review</i> (July, 1897—Dec. 1898; Jan., 1900—June, 1901)	1,125	100	1,125
Total	1,368	100	1,368
1919			
* <i>Physical Review</i>	722	100	722
U.S. National Bureau of Standards. <i>Scientific Papers</i> , Vol. XV (1919/20)	437	100	437
Total	1,159	100	1,159
1939			
* <i>Physical Review</i>	4,300	20	905
<i>Journal of Applied Physics</i>	560	20	118
Optical Society of America. <i>Journal Reviews of Modern Physics</i>	590	20	113
	1,130	20	257
Total	6,580	20	1,393
1946			
* <i>Physical Review</i>	3,290	20	500

* "Key" journal.

1,200 references, so that a sample that produced fewer than the predicted number would still be adequate.

An estimate was made of the total number of citations contained in each of the source journals. These estimates are also shown in Tables 1 and 2. Since a sample of about 1,200 references for each period was desired, it was then possible to compute the proper percentage for the sample. Thus, in chemistry approximately 60 per cent of all references were needed for 1899, approximately 33 per cent of the references in 1919, and approximately 6 per cent in 1939. The partial sample for 1946 was made by analyzing the *Journal of the American Chemical Society* alone and taking the same 6 per cent of its citations. The total size of the samples and the journals from which they were derived are shown in the last column of Tables 1 and 2. In physics the procedure was the same, the only variations being the percentages required to give the desired sample size. In order to get a sufficiently large sample in 1899, it was found that the *Physical Review* would have to be used from July, 1897, through June, 1901. In 1919 a total of 1,159 citations were produced by using the two titles for the year, though it should be noted that the publishing period of the United States National Bureau of Standards' *Scientific Papers* for the most suitable volume for the period ran slightly over into 1920. There were some discrepancies between the rough estimates of total citations and the actual sample based on a fixed percentage.

The reliability of the subject distribution was measured in terms of the range in percentage for which there was a 95 per cent probability of the true value falling. The ranges were computed from binomial probability cross-section paper for individual standard errors.

References were searched to establish full bibliographic details and to secure the Library of Congress subject classification for each title cited. The classification was secured from the *Catalog of Books Represented by Library of Congress Printed Cards* or from the University of Chicago depository or public catalogs. For those items where the classification was not available from these sources, the information was omitted. A very high percentage of the items cited received a subject classification. The Library of Congress classification gives a subject (or form) classification for the titles that were cited in the source journals and is not a subject classification of the articles themselves. Since our study was fundamentally concerned with libraries, the subject location of the entire title was regarded as more essential for our purposes than the actual subject matter of the individual articles.

ASSUMPTIONS

One of the most basic assumptions involved in the adopted procedure is that a citation means use of the material cited. Some scientists will probably cite materials that they have not used, and others may not cite material that has been used. Omissions are probably quite common for general reference works, tables, textbooks, handbooks, and similar items. It appears reasonable to assume that the cited references will depart from true use by a modest understatement rather than overstatement.

It must be further assumed that the selection of source journals gives a general picture of research literature for "pure" chemistry and physics. This assumption is more problematical and more difficult to weigh in validity. It depends upon the adequacy of the original key journal and the nature of the addi-

tional source journals produced from the key journal. However, the method is probably as representative of the core of the general literature of the field as any readily applicable method could be. By emphasizing the "pure" rather than the applied aspects of a field and by attempting to define the "core" of the subject fields rather than the fringes, the anticipated changes in subject relationships, titles, forms, or dates should be minimum rather than maximum in value.

PREVIOUS STUDIES

This study is a form of statistical bibliography. The general procedure is not new. Many other investigators have listed and analyzed the references in various single serial titles or in groups of titles or in other source materials.² The present study differs from most of the previous investigations in the method of selecting the source journals; in the inclusion of all printed materials, serial and nonserial; in the emphasis on subject classification; in the use of generalized data on date distribution rather than its association with individual titles; and in the simultaneous application of a uniform procedure to two subject fields over a period of time.

THE SUBJECT DISTRIBUTION OF SERIALS

The existence of subject diversification in the literature requirements for some of the hybrid sciences such as biophysics or for some of the applied sciences such as metallurgy and electronics is fairly evident to both the user and the planner of libraries. One of the

questions proposed for investigation in this study was whether there was a similar tendency for the more basic sciences of physics and chemistry to become more diversified in their own literature requirements with the passage of time. In order to measure this tendency, a search for the subject classification of the Library of Congress was made for every title listed in the sample periods.

Not only was a search to be made for an increase or decline in the subject diversification of the literature of physics and chemistry. In addition, the two fields were selected because it was believed that a comparison of their subject requirements in research literature might facilitate the interpretation of results for a single field. It was hypothesized that the literature of chemistry might be more diverse in its subject requirements than the literature of physics.

The principal results of the subject analysis are presented in Tables 3 and 4 for serial titles in chemistry and physics, respectively. In these two tables the percentage of titles and the percentage of references in each of the major subject classifications for the two fields have been presented. Table 3 may be read as follows: 7.4 per cent of the serial titles cited in the chemical source journals in 1899 were classified among the publications of general learned societies (AS); 13.9 per cent of the serial titles for the same period were in the general field of science (Q). For these two fields the percentages of references cited were 5.7 and 5.5 per cent, respectively.

SUBJECT CHANGES IN CHEMISTRY SERIALS

Since the sample for 1946 may be unreliable because of both the way in which the sample was made and its date, it is probably most reasonable to compare the

² For a fairly complete list of references on this subject see L. R. Wilson and M. F. Tauber, *The University Library* (Chicago: University of Chicago Press, 1945), pp. 325-26.

TABLE 3
SUBJECT DISTRIBUTION OF THE SERIAL TITLES AND REFERENCES CITED IN THE
CHEMISTRY SOURCE JOURNALS

SUBJECTS	PER CENT							
	Titles				References			
	1899	1910	1939	1946	1899	1910	1939	1946
Publications of learned societies (AS)	7.4	8.9	4.5	6.4	5.7	4.8	1.9	3.1
Science (general) (Q)	13.9	15.4	13.0	11.8	5.5	6.7	7.3	7.9
Physics (QC)	4.6	6.5	12.2	7.5	3.5	4.4	6.5	4.8
Chemistry (QD)	22.2	21.1	30.5	32.1	75.5	68.1	71.2	68.5
Physiology (QP)	2.8	7.3	6.9	9.6	0.6	6.9	4.1	3.8
Other subjects in science (Q-)	8.3	8.1	5.4	3.2	0.9	1.0	1.0	0.5
Pharmacy and materia medica (RS)	7.4	5.7	2.3	2.1	1.5	1.7	0.3	1.3
Other subjects in medicine (R-)	1.8	8.1	5.4	6.4	0.2	1.0	0.7	1.4
Agriculture (S-)	3.7	1.6	2.3	1.1	1.0	0.3	0.3	0.2
Electrical engineering and industries (TK)	0.0	0.8	1.5	1.1	0.0	0.1	2.5	2.9
Mineral industries (TN)	3.7	2.4	0.8	1.1	0.6	0.4	0.1	0.2
Chemical technology (TP)	3.7	7.3	9.2	9.6	1.8	3.5	3.4	4.3
Other subjects in technology (T-)	7.5	2.4	1.6	1.1	1.1	0.5	0.1	0.2
Miscellaneous and unclassified	13.0	4.4	4.4	6.9	2.1	0.6	0.6	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of titles and references	108	123	131	93	1,214	1,060	1,085	558

TABLE 4
SUBJECT DISTRIBUTION OF THE SERIAL TITLES AND REFERENCES CITED IN
THE PHYSICS SOURCE JOURNALS

SUBJECTS	PER CENT							
	Titles				References			
	1899	1910	1939	1946	1899	1910	1939	1946
Publications of learned societies (AS)	14.4	11.4	6.7	10.4	15.2	4.7	3.2	4.1
Science (general) (Q)	25.9	19.5	22.4	32.8	29.4	27.4	20.0	19.3
Physics (QC)	13.4	12.2	20.2	25.3	37.1	44.1	63.1	69.9
Chemistry (QD)	15.4	9.8	10.4	7.5	8.2	5.6	3.1	2.2
Other subjects in science (Q-)	6.8	9.8	10.4	5.9	2.6	3.7	1.7	0.9
Electrical engineering and industries (TK)	7.7	8.9	10.4	3.0	5.8	3.3	3.4	0.6
Other subjects in technology (T-)	7.7	22.7	11.2	8.9	0.9	10.2	3.9	2.2
Miscellaneous and unclassified	8.7	5.7	8.3	6.2	0.8	1.0	1.6	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of titles and references	104	123	134	67	1,201	1,043	1,279	461

figures of 1899 with those of 1939. Of the subject shifts in references between 1899 and 1939 shown in Table 3 for chemistry, the following are sufficiently large so that the 95 per cent probability ranges for the two different periods do not overlap.

Increases	Decreases
Physics (QC)	Publications of learned societies (AS)
Physiology (QP)	Pharmacy and materia medica (RS)
"Other fields" in medicine (R-)	Agriculture (S-)
Electrical engineering and industries (TK)	Mineral industries (TN)
	"Other fields" in technology (T-)
	Miscellaneous and unclassified

If the figures in Table 3 are compared with those in Table 4, it will be noted that there was a greater dispersion in the subject distribution of the chemical research literature than was the case for the physical research literature, even though the addition of new subjects with time or the complete disappearance of former subjects with time is not a conspicuous phenomenon in either subject field.

SUBJECT CHANGES IN PHYSICS SERIALS

Of the changes between 1899 and 1939 in the subject distribution of the serial references used by physicists (Table 4), all are significant except the slight decline in the references classified in "other sciences" (Q-) and the slight increase in the group designated miscellaneous and unclassified.

Increases	Decreases
Physics (QC)	Publications of learned societies (AS)
Other technology (T-)	Science, general (Q)
	Chemistry (QD)
	Electrical engineering and industries (TK)

The increase in the use of physics literature by physicists brings the percentage for this type of material into close agreement with the percentage of chemical literature used by chemists, and it appears not unreasonable to conclude that a fair portion of the increase may be attributed to a growth in the amount of literature classifying in physics between 1899 and 1939.

The use of technology in 1919 was rather conspicuous. This probably should not be entirely attributed to the war, for a considerable part was due to the accident of source titles. In 1919 the single supplementary source journal to *Physical Review* was the United States National Bureau of Standards' *Scientific Papers*. The technological aspect of this journal was fairly evident from a casual examination of it.

RELATION BETWEEN REFERENCES AND TITLES

The rather sharp contrasts between the title distribution and the percentage of references in both chemistry and physics are most conspicuous. Thus, it is to be noted that 30.5 per cent of the serial titles classifying in chemistry in 1939 supplied 71.2 per cent of the references (Table 3). In the field of physics only 20.2 per cent of all the serial titles used supplied the physicists with 63.1 per cent of all serial references in the field of physics (QC). However, when one leaves either major field for its related fields, the provision of scientific literature becomes very much more difficult. In 1939, for example, 10.4 per cent of all the serial titles used by physicists were in the subject of chemistry, but they supplied only 3.1 per cent of all references. The 10.4 per cent of titles in the other subjects in science used by physicists supplied only 1.7 per cent of the references. It is thus

clearly evident that, as soon as the specific area of a subject field is left, the provision of journal literature in terms of titles will have to be very much more elaborate in order to supply a significant proportion of the required references. It is evident that the citations to the periphery journal material will not show the pyramidal effect that is shown in the most-used journals of the field itself, though even in the outside fields a

tinent to the major field in chemistry. There was an average of 38.2 references in 1899 to each serial title in chemistry. This had declined in 1919 to 27.7 references and in 1939 to only 19.3 references per title. The figures for 1946 apparently indicate that the trend may be expected to continue somewhat further. The same declining proportion of references is true for the two fields in the other major disciplines, that is, the use of physics jour-

TABLE 5
AVERAGE NUMBER OF REFERENCES PER SERIAL TITLE

Subject	CHEMISTRY				PHYSICS			
	1899	1919	1939	1946	1899	1919	1939	1946
Publications of learned societies (AS)	8.6	4.7	3.5	2.8	12.1	3.5	4.5	2.7
Science (general) (Q)	4.5	3.7	4.6	4.0	13.1	11.1	8.5	4.0
Physics (QC)	8.6	5.9	4.4	3.8	31.7	30.6	29.9	18.9
Chemistry (QD)	38.2	27.7	19.3	12.7	6.2	4.9	2.8	2.0
Physiology (QP)	2.3	8.1	4.9	2.3				
Other subjects in science (Q-)	1.2	1.1	1.6	1.0	4.4	3.2	1.5	1.0
Pharmacy and materia medica (RS)	2.3	3.6	1.0	3.5				
Other subjects in medicine (R-)	1.0	1.1	1.1	1.3				
Agriculture (S-)	3.0	1.3	1.0	1.0				
Electrical engineering and industries (TK)	0.0	1.0	13.5	16.0	8.8	3.1	3.1	1.5
Mineral industries (TN)	1.8	1.3	1.0	1.0				
Chemical technology (TP)	5.5	4.1	3.1	2.6				
Other subjects in technology (T-)	1.6	1.7	1.0	1.0	1.4	3.7	3.3	1.6
Miscellaneous and unclassified	1.2	1.2	1.0	1.0	1.1	1.4	1.7	1.0
Average	11.2	8.6	8.3	6.0	11.5	8.5	9.5	6.8

judicious selection of journal titles will aid materially in the provision of the references needed for research purposes.

The nature of this difficulty may perhaps be made a little clearer by examining the figures in Table 5, which presents the average number of references per serial title for each major subject field for chemistry and physics in each of the four periods of the analysis. There is a consistent and regular decline in the number of references per serial title with but a few minor exceptions. This decline is most conspicuous in the journals per-

nals by chemists averaged 8.6 references per title in 1899 and declined to 4.4 references per title in 1939. The averages for the two fields are even more consistent than the shifts for individual subjects, declining from more than 11 references per title in 1899 to around 8 or 9 in 1919 and 1939, and to about 6 in 1946. The implication is quite clear that, to cover any given number of references, a larger number of titles will be required than was formerly necessary, and the figures do not indicate that a limit has been reached. The situation is undoubtedly a

result of the increasing proliferation of journals, many of them highly specialized in character.

SUBJECT DISTRIBUTION OF NONSERIALS

In Table 6 the subject analysis is presented for the nonserial material used in chemistry and physics for the four different periods. As shown in the lower portion of that table, the average number of

substantial increase in use from 4.8 per cent to 14.1 per cent, though no such titles were cited in the 1946 sample. There is some increase also in material from other sciences, and a sharp decline in the physics use of chemical nonserial material in 1919. Chemistry, on the other hand, shows an increase in the use of physics nonserial material, a decline in its use of chemistry nonserial material, an increase along with physics in the use

TABLE 6
SUBJECT DISTRIBUTION OF NONSERIAL REFERENCES CITED IN CHEMISTRY AND
PHYSICS SOURCE JOURNALS

SUBJECT	PER CENT OF TOTAL							
	Chemistry				Physics			
	1899	1919	1939	1946	1899	1919	1939	1946
Publications of learned societies (AS)	0.0	1.1	0.0	0.0	0.0	0.0	0.9	0.0
Science (general) (Q)	1.3	1.1	7.0	2.1	1.8	0.0	2.6	2.6
Physics (QC)	6.7	16.3	15.1	8.3	58.1	66.4	60.5	59.0
Chemistry (QD)	48.0	35.9	38.4	56.2	8.4	2.6	6.1	12.8
Other subjects in science (Q-)	1.3	15.2	4.6	2.1	6.6	8.6	10.5	12.8
Technology (T-)	10.7	15.2	25.6	27.1	4.8	10.3	14.1	0.0
All other subjects	8.0	2.2	0.0	2.1	3.0	0.0	0.9	2.6
Unclassified items	24.0	13.0	9.3	2.1	17.3	12.1	4.4	10.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of references	75	92	86	48	167	116	114	39
No. of titles	66	74	64	32	115	87	87	37
Average no. of references per title	1.1	1.2	1.3	1.5	1.5	1.3	1.3	1.1

references per title very closely approaches unity. If the percentage distributions given in Table 6 are compared with those for chemistry and physics in Tables 3 and 4, one will note, as expected, that the major subject fields received the dominant proportion of the references, although the number of references was so small that elaborate subdivision does not appear to be reliable. Comparing 1899 with 1939, the changes in most instances appear somewhat more moderate than is the case for the serial subject changes. In physics, technology shows a

of nonserial material from other sciences, and a substantial increase along with physics in the use of technological material. Most of the shifts are too small and too erratic to be significant, but the approach of pure and applied science to each other is probably real.

It is quite apparent that the tendency for a large number of references to occur from one or a few sources is not characteristic of the nonserial material that is cited in the research literature in the fields of chemistry and physics. The average number of references per title in

chemistry increased from 1.1 to 1.5 in 1946 and, interestingly enough, declined in the field of physics from 1.5 in 1899 to 1.1 in 1946. However, as will be shown later, the use of monographic material is a minor consideration in the total research literature of chemistry and physics. To the extent, however, that such

from the source journals as a whole. There was reasonable agreement between the key journals and the source journals in the major subject groupings. The subject agreement for 1939 was so close, in fact, that the key journals alone might have been adequate as indicators of the subject distribution for the entire

TABLE 7
SUBJECT DISTRIBUTION TO SERIAL REFERENCES IN CHEMISTRY FOR THE LITERATURE
USED FROM EACH MAJOR COUNTRY

COUNTRY	PERIOD	NATIONAL PERCENTAGES OF REFERENCES								PER CENT OF ALL REFER- ENCES FOR YEAR FOR EACH COUNTRY
		Learned Societies	Science (Gen- eral)	Physics	Chem- istry	Other Sciences	Tech- nology	Other Subjects	Un- classi- fied	
U.S.A.....	1899	0.3	5.3	0.3	82.0	0.7	3.6	7.5	0.3	25.1
	1919	1.2	5.9	3.2	65.7	13.3	5.2	4.9	0.5	38.2
	1939	0.0	2.1	7.4	78.3	6.1	4.4	1.7	0.0	48.5
	1946	0.0	2.7	6.8	74.0	6.1	5.4	5.1	0.0	53.1
Germany.....	1899	0.3	0.2	6.7	85.6	1.7	2.9	1.3	1.3	49.1
	1919	2.1	0.2	7.0	80.9	4.9	3.0	1.4	0.5	40.5
	1939	0.7	1.9	9.2	78.2	5.5	3.3	1.1	0.0	25.0
	1946	0.8	13.4	4.5	71.6	2.2	3.0	3.0	1.5	24.0
Great Britain....	1899	2.0	30.1	0.0	57.5	1.3	5.2	3.3	0.6	12.6
	1919	1.0	36.2	0.0	42.9	4.8	11.4	1.9	1.9	9.9
	1939	0.0	33.3	0.6	43.7	2.9	19.0	0.6	0.0	16.0
	1946	0.0	21.1	0.0	47.9	4.2	26.8	0.0	0.0	12.7
France.....	1899	49.2	2.5	0.8	40.8	1.7	3.3	1.7	0.0	9.9
	1919	37.4	0.0	3.6	53.0	4.8	0.0	1.2	0.0	7.8
	1939	39.4	0.0	3.0	48.5	6.1	0.0	3.0	0.0	3.0
	1946	44.4	0.0	0.0	51.9	0.0	0.0	0.0	3.7	4.8
All others.....	1899	10.0	2.5	2.5	47.5	5.0	2.5	7.5	22.5	3.3
	1919	13.2	21.1	2.6	52.6	0.0	2.6	7.9	0.0	3.6
	1939	7.4	6.2	6.2	69.1	1.2	2.5	0.0	7.4	7.5
	1946	10.0	10.0	3.3	63.3	0.0	6.7	0.0	6.7	5.4

material is necessary, it is clear that its diversification in terms of titles will be much greater than for serials.

COMPARISON BETWEEN THE SUBJECT DISTRIBUTION OF REFERENCES FROM KEY AND SOURCE JOURNALS

The literature distribution of serial references for major subject fields from the key journals for chemistry and physics were compared with the distribution

field. In 1939 the largest number of source journals for each field were employed, and hence it is in this period that the largest differences in subject distribution between the source journals as a group and the key journals might have been expected. The rank-order correlation of the subject groups for the two different samples in chemistry for this year was 0.905 and in physics, 0.976.

The agreement in earlier years was not

always quite so close, but the general order of magnitude of the two sets of figures was, on the whole, similar. There was a further departure between the two sets of figures for monographic material than for the serial material, but undoubtedly the small number of nonserials accounted in part for this variation. For

and physics and serial and nonserial material.

NATIONAL DIFFERENCES IN SUBJECT DISTRIBUTION

It was hypothesized that the subject distribution of the serial references to journals from different countries might

TABLE 8
SUBJECT DISTRIBUTION OF SERIAL REFERENCES IN PHYSICS FOR THE LITERATURE
USED FROM EACH MAJOR COUNTRY

COUNTRY	PERIOD	NATIONAL PERCENTAGES OF REFERENCES								PER CENT OF ALL REFERENCES FOR YEAR FOR EACH COUNTRY
		Learned Societies	Science (General)	Physics	Chemistry	Other Sciences	Technology	Other Subjects	Unclassified	
U.S.A.....	1899	2.9	19.6	44.5	4.3	12.4	14.8	1.4	0.0	17.4
	1919	0.4	11.0	62.6	4.1	5.6	15.5	0.7	0.0	44.4
	1939	0.2	5.8	80.1	2.8	2.2	7.2	1.6	0.0	52.3
	1946	0.0	3.4	91.4	1.9	0.8	2.6	0.0	0.0	57.7
Germany.....	1899	6.6	4.3	72.2	13.3	0.7	2.3	0.5	0.2	36.9
	1919	3.1	4.4	64.9	10.7	3.1	13.3	0.4	0.0	21.6
	1939	1.4	12.7	69.6	4.6	0.7	9.9	0.0	1.1	22.1
	1946	3.5	12.1	72.4	8.6	1.7	1.7	0.0	0.0	12.6
Great Britain....	1899	6.2	81.8	1.2	1.5	0.6	8.5	0.3	0.0	28.4
	1919	4.4	75.7	4.4	1.6	1.6	11.2	0.0	1.2	24.1
	1939	3.8	83.6	3.3	0.0	1.1	8.2	0.0	0.0	14.3
	1946	11.8	79.4	2.9	0.0	0.0	5.9	0.0	0.0	14.7
France.....	1899	65.6	0.6	13.4	13.4	0.0	7.0	0.0	0.0	13.1
	1919	42.0	0.0	12.0	20.0	4.0	20.0	2.0	0.0	4.8
	1939	48.7	2.7	35.1	8.1	5.4	0.0	0.0	0.0	2.9
	1946	41.7	8.3	50.0	0.0	0.0	0.0	0.0	0.0	2.6
All others.....	1899	45.1	25.5	13.7	9.8	0.0	0.0	0.0	5.9	4.3
	1919	14.8	64.8	13.0	3.7	0.0	0.0	0.0	3.7	3.2
	1939	10.3	25.2	51.4	4.7	0.9	2.8	0.0	4.7	8.4
	1946	7.0	31.6	50.9	0.0	1.8	1.8	0.0	7.0	12.4

example, in 1939, 37.4 per cent of the nonserial material from all source journals was in the field of chemistry, while the key journals assigned 55.1 per cent of the nonserial material to chemistry.

There were subject shifts within the major subject areas shown in the tables, but, since they are subsidiary to the major shifts, a discussion of their character is omitted. Differences were apparent in these shifts also between chemistry

vary in character, and this analysis is presented for chemistry in Table 7 and for physics in Table 8. In each table, for each of the major subject categories, the percentage of the subject distribution for the literature for each country for each period has been shown. Table 7 may be read as follows: of the references in 1899 to serials published in the United States, 0.3 per cent of the references were to titles classifying with publications of the

learned societies, 5.3 per cent of the references were to titles classifying under science, 0.3 per cent of the references were to titles classifying in physics, etc. Of all serial references from chemical source journals in 1899, 25.1 per cent were to publications of the United States. A casual examination of Tables 7 and 8 reveals that there are sharp differences in the subject distributions for different countries. For United States publications used by chemists the few references to publications of general learned societies can be contrasted with the strength of the references to chemical material and the general scattering of other subjects. In Germany the distribution is in many respects roughly comparable to that for the United States except that references to science (general) are somewhat smaller, with the exception of 1946, and references in the field of physics are of greater importance, though the difference is not great in 1939.

The use of British serial literature by United States chemists is essentially divided between publications in science (general) (Q) and in chemistry (QD), with considerable emphasis in more recent years in the field of technology. In France the division for chemical use is between chemistry (QD) and the publications of general learned societies (AS). In all other countries the references are scattered from a subject point of view, with the major emphasis in chemistry.

For United States publications used by physicists, the great increase in references to material classifying within physics itself is to be noted as well as the scattered nature of the other subject areas. The figures again for Germany are roughly comparable with those for the United States. For British references, the large proportion of references is in the field of science (general) (Q), and the

lack of emphasis on physics is conspicuous. In France the emphasis is upon the publications of general learned societies (AS) with some emphasis upon French physics publications, although the total quantity of such references are clearly quite small when the proportions of her contribution to the total literature are considered.

An examination of the title distributions revealed that a large portion of this variation in subject distribution, especially for Great Britain and France, may be attributed to the great importance of one or a few individual journals. The *Philosophical Transactions* and *Proceedings* of the Royal Society of London and the *London, Edinburgh and Dublin Philosophical Magazine* classify in the field of science (general) (Q). Since these publications are of conspicuous importance among British publications used by United States chemists and physicists, it is only reasonable to expect a preponderance of British literature to be in science (general). On the other hand, the title lists also showed the great importance of the *Comptes-Rendus* of the Académie des Sciences, Paris. This publication is classified by the Library of Congress under general learned societies (AS), and much of the emphasis throughout the study upon society publications in France may be attributed to this particular title.

SUBJECT INTERRELATIONSHIPS

In the interests of effective library operations, it is clearly desirable to ascertain the interrelationships among all cognate subjects. Complete interrelationships are disclosed in the present study only between chemistry and physics. To facilitate comparison for these two fields, reference may be made to Tables 3 and 4. It is shown there that, in 1939, 6.5 per

cent of the serial references used by chemists were in physics, and in the case of physics 3.1 per cent of the references were in chemistry. The use of physics titles constituted 12.2 per cent of all serial titles used by chemists, and the use of chemistry titles was 10.4 per cent in 1939 of all serial titles used by physicists. The use of nonserial material (Table 6) should be added to the interrelations indicated above. The use of mathematical literature by both chemists and physicists appears somewhat low in this study. One may speculate as to whether mathematical literature may not in actual fact be used but not cited.

In concluding the discussion of subject distribution, it may be indicated that, while there are significant shifts in

subject emphasis in both chemistry or physics, there has been no strong tendency for the fields to change in their subject diversification during the period covered by the analysis. However, the growing diversification in terms of titles is quite apparent and will produce problems of increasing complexity for libraries, especially those that are closely departmentalized. To the extent that the average number of references per journal title tends to decrease, the number of journal titles required to produce any given number of references must obviously increase. A judicious selection of the more important journals in each subject field will tend to minimize the problem of diversification but cannot eliminate it for general research purposes.

[This is the first in a series of two articles by Mr. Fussler]

THE AMERICAN LIBRARY ASSOCIATION: FRAGMENTS OF AUTOBIOGRAPHY

WILLIAM WARNER BISHOP

IT WAS, I believe, in 1896 that I became a member of the distinguished professional group known to librarians everywhere by the initials A.L.A., but to others as the American Library Association. It was owing to Dr. G. E. Wire that I joined in advance of the Cleveland conference of 1896, with the "serial number" 1435, and I have always been peculiarly grateful to him for insisting that I become a member. The A.L.A. was only twenty years old when I joined. It was a very simple organization—no paid officers or staff, a complete absence of formality about its meetings, and a real and sincere discussion of issues raised at them. I still recall the gale of laughter that at one of the meetings at Cleveland greeted the opening words of Mr. Wing, of Scribner's, "I have read a great many bad books." It was some minutes before he could go on to add, "But the *Damnation of Theron Ware* is the worst of the lot." It was his sincere manner rather than his words which caused the laughter. Real discussion marked the meetings, in sad contrast to the present day when some five thousand is not an unusual attendance. There were about three hundred present at Cleveland, if my memory serves me.

The Association heard a very sincere and moving presidential address from John Cotton Dana, then of Denver. Thwaites of Madison said it should have been termed "the seamy side of library work," and he was right, as usual. Dana even then was fond of dwelling with insistence on the lack of influence of li-

brarians and the bad conditions under which many of them worked. If anyone cares to look it up, it is found printed in full in the *Proceedings*, and my impression is that the facts he brings forth are as true today as in 1896. But these sad and profound truths found little response in the heart of a beginner in librarianship. What I was chiefly interested in was the opportunity to make acquaintance with the people who were doing things in librarianship. And there was a chance to meet many of them.

I recall that the Association included in its program a post-conference trip on a lake steamer to Mackinac Island and a sojourn there. I did not go on this trip, but my mother seized the opportunity afforded by it to give a breakfast in our home in Detroit to several librarians who had come on the boat from Cleveland the night before. I cannot recall all who were present, but Thwaites, Hopkins, Dr. Wire, Mr. and Mrs. Henry Carr of Scranton, Miss West and Miss Stearns of Milwaukee, and Miss Hazeltine, I do remember. Later we went to the Public Library, and the Mackinac party took the boat at Belle Isle. This breakfast was frequently spoken of by those who were present as a most successful event. What I chiefly remember it for is the fact that Miss West of Milwaukee was even then engaged to Mr. Henry L. Elmendorf, who, as secretary of the A.L.A., was much concerned with the arrangements for the Cleveland conference, and several of the guests (including those from Wisconsin) criticized him unmercifully in

consequence of their complete disapproval of those arrangements and of him personally. When they later learned of the marriage of Mr. and Mrs. Elmendorf, one can imagine their feelings. Elmendorf later went to Buffalo, where he died in office as head of the Public Library. Mrs. Elmendorf was employed (as chief assistant) in the library and became president of the A.L.A. while there, the first woman to hold that office. My acquaintance with her, begun in Milwaukee before her marriage, continued until her death. She was a very able woman, one of the first to understand the value of work with children, in which she employed Miss Lutie Stearns, a pioneer in that work and a very good friend of mine. I recall that I heard from Thwaites how Miss Stearns chanced to be taken onto the staff of the Milwaukee Public Library. Miss West noticed that practically all their children's books were out, and inquiring the reason found that a certain Miss Stearns, a schoolteacher in a Polish neighborhood, was responsible. She promptly hired her to manage the children's room in the library, and from that day on Milwaukee was pre-eminent in children's work.

The A.L.A. met in 1897 in Philadelphia. It is a commentary on the small size of the organization that it could be accommodated in the rather small Aldine Hotel on Nineteenth and Chestnut streets. I attended the Philadelphia conference on my way to Chautauqua from my sister's graduation at Vassar, and my chief recollection of it is that I spent one evening in listening to an orchestral concert at a summer place near the city with Josephus Nelson Larned of Buffalo instead of hearing Crunden's address as president. Larned was a most interesting man, very kind to a young beginner. I recall that he drew

me out on my studies and had even heard that I had presented a paper on the "Constitution of the Gallic State" to the spring classical conference in Ann Arbor. Dr. Billings showed to the College and Reference sections the plans for the New York Public Library—not completed until 1913—and I remember him rolling up the blueprints as he answered questions. It was the first occasion on which I saw him, though he had been prominent for years as head of the Surgeon General's Library, which he had made the first medical library in the world. I recall that I returned to Chautauqua with but four dollars in my pocket after paying my bill at the Aldine Hotel.

In 1898 the A.L.A. met at Lakewood on Chautauqua Lake. Miss Emogene Hazeltine, head of the Jamestown (New York) Public Library (later for years head of the Wisconsin University Library School), was the hostess of the conference, and, as I had come to know her well in the two previous summers, she naturally used me in whatever services I could perform while teaching at the Chautauqua Summer School. I recall that I took Miss Finie Burton, who later became my wife, to several sessions, and we had dinner with Thwaites, Dr. Wire, Hopkins, and some others. But I confess I do not recall much of the sessions of the conference under Putnam's presidency.

In August, 1898, I went to Rome to get out of library work—how successfully the reader can judge. But, seriously, I found that the extra work of two positions was too much for my strength, and, though I kept up the combination of teaching and librarianship for three years after my return, I finally abandoned teaching when I went to Princeton, not to take it up again until I could teach library subjects at Michigan.

I once heard Mrs. Salome Cutter Fair-

child give the first of a series of illustrated talks on "Presidents of the A.L.A.," and I have heard J. I. Wyer give his well-known talks on the early presidents. Both had a good deal to say about Justin Winsor of Harvard, the first president of the Association, whom I recall from the fact that he gave the Commencement Address at Michigan in June, 1892, when I received my A.B. diploma from the hands of President Angell. I cannot claim that I profited greatly by the address, for I heard but one phrase of it, "in the year 1668." Justin Winsor had a bushy beard, and he talked into it. I am always glad that I at least saw the editor of the *Narrative and Critical History of North America*, which I later came to use with so much profit. But I did not know him or his successor in the presidential office, Dr. William F. Poole, of Chicago, whose results I had known very well in the Newberry Library.

But I did know well Melvil Dewey, the original secretary of the A.L.A., and later its president. No one could be indifferent to him. You were either a pro-Dewey enthusiast or a violent opponent at once. I confess in the early days I was definitely an opponent. He just rubbed me the wrong way. Not that it mattered in the least to Dewey, or matters at this distant date to anyone. I first met him at Armour Institute when Miss Sharp brought him on to lecture in 1897, and found it was impossible not to be carried away with his eloquence—for he *was* eloquent. It was only when I got home and sat down to consider his contentions that I found myself disagreeing with him, and then only in the things he omitted to stress. Dewey was the apostle of the tax-supported public library, although he never was in charge of a public library but was in two colleges—Amherst and Columbia—and the New York State

Library. Dr. Wire was a disciple, but even he was cool to some of Dewey's ideas, and Hopkins, my other mentor, had the detachment of the typical university man. There is no question that on the housekeeping side of library work—and much of a library's work is just plain housekeeping—Dewey made original and valuable contributions to librarianship. I was destined to meet Dewey long after he retired from active library work, on the occasion of the centennial of the New York State Library, and was startled to note that he was twenty years behind the times in his conception of what public libraries might do and be. It taught me a lesson—you have to keep up or you are definitely "dated" by your ideas. Dr. C. J. Little of Garrett (who had been state librarian of Pennsylvania) once asked me if I had ever noticed Dewey's eyes. They were bloodshot, and the conjunctiva were red, from too great mental activity, Dr. Little thought. Dewey was a restless person, as witness his eyes, and not at all a reflective type. But all that does not detract from his great work for libraries and librarianship. I am glad to have known him.

To continue with the presidents, Samuel Swett Green I came to know rather well in the early days. He was fond of a glass, and, when he had had about three drinks, he grew talkative. There was not much about him to impress a young enthusiast when he was in his cups, and that is how I chiefly remember him. Josephus Nelson Larned was altogether different; he didn't look or act as if he ever took a drink. He had built up the Buffalo Library on a subscription basis, and, when it was made a public library, he retired voluntarily from its direction, devoting himself to his *History for Ready Reference*, which has helped so many thousands of readers in libraries. I like to

recall that evening at Philadelphia when we played "hooky" together, running away from libraries to find sincere pleasure in orchestral music. I would rather hear an orchestra any day than listen to talk about library work, and we suspected in 1897 that Crunden's talk would be a "free-silver" oration, which it was. Anyhow, I have always had a warm recollection of Larned.

Crunden I did not know at all well, but I had the pleasure of a real friendship for W. H. Brett of Cleveland, whose tragic death in 1918 will ever be a sorrow. Brett had been a student for one year at Michigan, in the Medical School, I think, and that gave us an interest in common. He had been a bookstore man who had drifted into the Cleveland Public Library. The acquaintance begun in 1896 soon developed into a sincere friendship. Brett was a rather small man with modest manners and attire. He developed the Cleveland Library until it had several branches and was well on its way to its present building and its present success. I shall never forget one visit on which he showed me various branches and told me he had become a convert to the plan of renting buildings for branches because no one could foresee how the neighborhood would grow. I recall that he showed me one very handsome and costly branch building and remarked that it was crowded when it was first put up, but at that time didn't have a registered borrower living within half a mile, and attendance had fallen off badly. I shall never forget his ingenuity when the library moved into rented quarters on the top floor of a department store, all on one level. He seized the chance to develop a belt book-carrier, remarking that at last he had wholly favorable conditions. Most men would not have done a thing but wait for a new building. Brett took the

initiative and made out of necessity a service device that was most useful and convenient. His sudden death at the hands of a drunken taxi-driver deprived the library world of a sincere, admirable, and most pleasant colleague. He was a peacemaker, seldom taking sides, but reconciling opposites.

Mr. and Mrs. Henry J. Carr of Scranton enjoyed an influence and an acquaintance far beyond the importance of the Albright Library. Mrs. Carr had been Miss Rose, state librarian of Illinois, and was as well known and conspicuous as her husband. He had been for years in the postal service, and I recall he once told me that he knew over sixty-five cities well enough to recommend a hotel or direct a person to the principal sights. He was an early automobilist, and I have traveled with him over rough roads in the early days when you had spark control as well as air control on the wheel. Carr was for two years secretary of the A.L.A., and recorder before that, as well as president in 1900-1901. I met him in Evanston, where he came on A.L.A. business, and I frequently visited the Carrs in Scranton before my marriage. He and Dr. Wire were very well acquainted and used to speak very freely about other prominent members of the profession, calling them by nicknames usually. Carr had lived in Grand Rapids and knew Raymond C. Davis, librarian of the University of Michigan, rather well. He was a good, practical librarian of a small city library, but he had an influence far beyond the importance of his library. Mrs. Carr survived her husband for several years and was a conspicuous figure at A.L.A. conferences, where she managed an annual dinner for old-timers.

In the Brooklyn portion of these "fragments," I have spoken of Helen E. Haines. She was "recorder" of the

A.L.A., an office which in her hands became much more than it sounds. She arranged the publication in the *Library Journal*, of which she was managing editor, of the reports of the annual conferences, with all that that means in gathering and editing manuscripts. As recorder, she was familiar with the inside history of the A.L.A., and, as she came to know me rather well, I gradually became aware of that history. In fact, I have never, until recent years, been a stranger to internal politics and history of the A.L.A. This fact gave me a great advantage and fitted me to work profitably on committees. Because of my acquaintance with Miss Haines, with Thwaites, with Dr. Wire, and Henry Carr, I was made cognizant of many things which were not generally known. None of them at this date deserves retailing.

The A.L.A. met at Waukesha in Wisconsin in 1901. There my first paper was presented to the College and Reference sections. I say "presented," because I did not read it, having been called to Rome by the serious illness of my sister Helen. I can still see the look of astonishment on the face of W. I. Fletcher of Amherst College, who was the presiding officer of the meeting, when I thrust my manuscript into his hands and told him where I was going so suddenly. That was the first of many papers. If anyone has the patience to go through the *Proceedings* of the A.L.A., he will run on them constantly from 1901 to about 1941. I may remark that the last one published *in extenso* was at the Narragansett Pier conference, in 1906, with the exception of my presidential address in 1919. Most of the rest are summarized—generally by myself. I can well remember Mrs. Carr's actions at the Waukesha conference when the group picture was taken and she managed to get the young girls taken

without showing too much of their legs. Wasted effort it seems in these modern days! The problem of caring for the Association was becoming serious by the time of the Waukesha conference. The attendance was growing, but fortunately it was some years before the Association got too big for any but the largest summer hotels.

The next conference I attended—I was not able to go to *all* of them, as ordinarily no library paid my expenses—was that at Niagara Falls in 1903, when we met in the building of the manufacturers of Shredded Wheat. I recall that it was distinguished for its spotless condition, and I have been a devotee of the product ever since. Dr. James K. Hosmer of Minneapolis was the president, and I remember that he got his friend Goldwin Smith to come over from Toronto, where he was living in retirement. He did not make an address, as he was (in his own words) "suffering from the incurable disease of over eighty years," but he was presented to the audience, which rose to its feet at sight of him. I have always been glad I saw a man whose conduct during our Civil War meant so much to those opposing slavery. He was a tall, erect figure with bushy beard and hair, gray, of course, and his voice, though shaken with age, was still resonant and commanding. At Niagara I met Herbert Putnam under peculiarly delightful conditions and fell a victim to his charm, as most people did when he really cared to exert himself. I remember that my friend Hopkins made a very strong speech on the question of discounts from publishers and thereby made himself powerful enemies. My chief impression of the conference, however, is the effect of the falls at night, then undisturbed by floodlighting. A strong moon was the only illumination, with double lunar rainbows

as a result. I gazed and gazed, lost in wonder and admiration. I recall that Miss Haines, who went with me, said afterward that it was a comfort to go with someone who didn't talk. Words would have been futile in the face of that natural wonder. Later I recall that my chief impression was that of the Psalmist, "What is man that Thou art mindful of him!"

While I was at Princeton, I had ample opportunity to keep in touch with the A.L.A. Not only did the Atlantic City meetings in the spring afford good opportunities for the meeting of A.L.A. committees, but my chief, Richardson, was high in the councils of the Association and passed on to Collins and me at least much of what went on. I recall two meetings there of the Committee on Catalog Rules which formulated the Anglo-American Code and brought to Atlantic City a very distinguished group, including Cutter, Lane, Hopkins, and Hanson. I was in active touch with those efforts, and I recall that Miss McGuffey told me in Washington that she was surprised, in going over the correspondence, to find how much I had written Hanson from Princeton. Richardson was a member of that committee and gave me every opportunity to express my views. Princeton was halfway between New York and Philadelphia, and one naturally met librarians from both places, as well as visitors.

I recall attending the Narragansett Pier conference, in which the Association met under the presidency of Frank P. Hill, then of Brooklyn. Richardson had been president the previous year, but the A.L.A. met at Portland, Oregon, and it was too far for me to go on my own. Anyway, my wedding was in June, 1905, and I remember receiving a congratulatory telegram from some twenty librar-

ians in attendance at Portland. Putnam presided over the previous conference at St. Louis, and I recall Morris Carter contrasting him and Richardson as presiding officers, to the great advantage of Richardson. Hill I never liked. I met him first when Dr. Wire introduced me to him while I was at Brooklyn, and I knew him rather well until his death a few years since. He was the most prominent member of the Executive Board during my presidency, the chairman of the A.L.A. committee which raised so much money for the Army War Libraries. I succeeded in keeping him in a minority of one during my term of office, but it was a hard struggle and doubtless had its effect in forming my personal opinion of Hill. A good many librarians found him hard to get on with; Andrews, Anderson, Billings, Putnam, I recall as violently opposed to him. Nobody denied his ability; it was on the personal side that people disliked him. He found the Newark Public Library a nonentity and made it one of the outstanding libraries of the nation. He did not succeed so well in Brooklyn, where he followed Bostwick, but I doubt if anyone could have done an outstanding job there at that time. But he was a thorough librarian, a complete success on the professional side. If people disagreed with him and found him thick-skinned and obstinate, they never refused him the distinction of being competent. He had some reputation for the more recon-dite side of our profession, but his *Newark Imprints* was issued in conjunction with Lansing Collins of Princeton, who did the real work. Hill was well summed up by Dr. Keppel, who, I recall, advised me to let him severely alone. That seems the best advice possible.

The Narragansett Pier conference I recall for two things—one was the clam-bake with its profusion of food cooked

and served under ideal conditions. The second was my rather long paper on "Subject Headings" which I later incorporated in my *Practical Manual of Modern Library Cataloging* as the final chapter. I have always been interested in the means of making known the actual contents of books in libraries. Since that chapter appeared, about the only thing on subject headings has been John Ansteinssohn's chapter in the *Vatican Rules*. There seems to me still a great field for catalogers in the subject approach to their task. Miss Mann used it in her book—after repeated talks with me—but chiefly on the classifying side, where it doubtless belongs. But I commend the subject to the attention of the younger generation. Richardson's comment on the paper was characteristic, "You've given us something to think about."¹

Putnam sent me to the Lake Minnetonka conference in 1908 to represent him personally, as he could not be present. I made the trip by lake steamer to Duluth and thence to Minnetonka and have never forgotten the heat in Duluth which was the worst I have ever felt—112 degrees. It was a curious sort of conference. Small steamers made the rounds of the lake, bringing people to the meeting place on a central pier. By a curious chance certain sparrows were imprisoned in the wire netting at the meeting-place and caused the air to resound with their cries. Years afterward I found that people forgot what had been said but never forgot the sparrows and their noise. It gave me a curious feeling when engaged in the business of program-making. At Minnetonka I read a paper

¹ Of course I do not ignore the influence of the A.L.A. *List of Subject Headings* or of the Library of Congress' *List of Subject Headings*, as well as the efforts to simplify procedure which have been repeatedly made in that library.

on "The Amount of Help To Be Given Readers." By this time—1908—the A.L.A. was getting too large to be easily housed even at a large summer resort, and now it is only possible at some such place as Atlantic City to bring the Association together, and even then there is no point in a "headquarters" hotel.

Charles Henry Gould of McGill University in Montreal I knew very well, and, indeed, I visited him in his home more than once. I first met him at Atlantic City, where he attended one of the A.L.A. committee meetings. He was my first Canadian intimate. The fact that I grew up in Detroit separated by only a mile of water from Ontario led to an interest in Canadian library conditions which has never ceased. Gould was president of the A.L.A. in 1908-9 and presided over the Bretton Woods conference, which I attended, going up from Washington with Thomas Forsyth Nelson by sea from Baltimore to Boston and making the short trip to New Hampshire by rail. I fear that I recall little about the conference except the quality of the food and service at the Mount Washington Hotel, which were both excellent. Here I had the first of many long talks with Samuel Ranck of Grand Rapids, but I do not recall any of the papers at the meetings. Gould was a rather quiet man of slow speech, a very loyal Canadian, wedded to the British Empire and its traditions, but nonetheless a loyal friend and colleague. Lomer, his successor, I have known very well, and George Locke of Toronto I later came to know quite intimately. I had met Locke when he was a fellow at the University of Chicago and came to know him very well when we were both older. He did yeoman service during the first World War, raising money in Ontario and enlisting interest and energy. He was often in Ann Arbor,

and I recall late in his life trying to secure through him the services of Lord Tweedsmuir (John Buchan) as a speaker to the tristate meeting of librarians in Toledo—Ohio, Indiana, and Michigan joining in a common meeting. Lord Tweedsmuir at first accepted, then, as he thought the matter over, asked Locke to tell me that he had not realized how great the demands would be on his time and strength as governor-general of Canada. Locke was a Kipling enthusiast and once lectured in our library on Kipling. I recall that he told me he was going to England to bring back his successor. It proved to be Charles Sanderson, who now presides over the Toronto Public Library in place of Locke, who has died. An acquaintance with Ontario problems as they affect librarians is the natural result of geographical proximity. I have always found my Canadian colleagues sympathetic and helpful. And I have never had to remind them that the American Library Association includes *all* the Americas. Now that they have at last formed a library association of their own, I trust they will not ignore their evident duty to adhere to the older association which for so many years made them welcome. A good many Canadian students have come to the Michigan Department of Library Science, and I count among my most loyal friends some few of them whom I have known particularly well.

It was still possible, in 1908, for me to go to a convention without responsibilities, save an occasional paper. Later, as committee duty increased, it became impossible to attend without rushing to committee and board meetings. I managed to attend the Mackinac Island conference in 1910 and have never forgotten the way in which my good friend, Professor Azariah S. Root, of Oberlin, summed up at a meeting of the Bibliographical

Society the state of the controversy over the origin of printing. He had never a note before him, but he stated the opinions of each writer on the subject as if he had the text with him. It was a remarkable performance, and one which I have seldom seen equaled. Later I got Professor Root to teach at Michigan in several summers and have always enjoyed looking back over a course which we gave together in "College Library Administration." If the students got out of the course as much as the teachers did, they were indeed fortunate. At Mackinac I remember Putnam asking me whether I thought Hanson or Martel should be recommended to Burton of Chicago as his assistant director. I plugged for Hanson, evidently with Putnam's assent, for he was chosen to go to Chicago. Meyer and I went camping in Bay Finn after the conference with "Tuff" Oakes as guide, and I recall that we had to sit up till the "wee, small hours" waiting for the steamer to take us to Collingwood, whence we made our way to Washington.

We were not always as fortunate as at Lake Minnetonka or Mackinac. At Kaaterskill, New York, in 1913, in the Catskills we met in an old summer hotel which was on its last legs and which ought not to have opened at all. Dr. Wire and I roomed together, as we generally did at A.L.A. meetings, and I remember that we both agreed that we should never get out alive if the hotel caught fire. Legler of the Chicago Public Library was president that year and got the blame for the hotel's condition, which I found out later was undeserved, as he had not wanted to go there. The Kaaterskill conference I have chiefly recalled because of the presence of a delegate from the Library Association of the United Kingdom, L. Stanley Jast, then of Coventry, I believe. An anonymous letter had been

sent to most of the prominent American librarians pointing out that Jast was not of English birth and, as an immigrant and a Jew, was not representative of British librarians. Putnam didn't show me this letter, though he received it, and I learned of it from someone else. Jast's address I recall distinctly. This was before the days of automobiles, though they were beginning to appear, and Mr. and Mrs. Carr drove over from Scranton. But it was still possible to take long walks along country roads, and I made the most of this opportunity to see the Catskills. I remember the Kaaterskill conference because of these walks with Dr. Wire, Anderson, Henry Carr, Root, and various others.

The next conference of the A.L.A. which I attended was in Washington in May, 1914, and a very hot week it proved to be. I recall that we saw daily a great number of librarians at the Library of Congress, where we made them welcome and showed them what they wanted to see. The Round Table was a great attraction at lunchtime, and Putnam even gave a dinner there. Anderson was president that year and made a strong plea in his presidential address for removing the tariff on books. Meyer and I quite wore ourselves out entertaining the A.L.A. members, particularly at the Cosmos Club, and I recall going back to my home in Kensington with a distinct feeling of relief after it was all over.

My good friend Miss Plummer, head of the New York Public Library's library school, was elected president at Berkeley in California, where the A.L.A. met in 1915, but could not serve as president at the Asbury Park meeting because of the fatal cancer which carried her off in the following September. She was a noble woman who had been very kind to me in Brooklyn, and I have mourned her sin-

cerely. She asked me to prepare a paper for the General Session at Asbury Park. A request from her was equivalent to a command, and accordingly I wrote the paper on "Leadership through Learning," which appears in the *Proceedings* of that conference. Brown, of Buffalo, presided as first vice-president in Miss Plummer's place. I remember the conference chiefly from several canoe trips which I made with E. H. Anderson on the lakes at Asbury Park. On these we discussed the plans for the new building at Michigan, whither I had been called in the preceding summer. Canoeing gave one an opportunity to talk without the interruption which was sure to occur on hotel verandas. At this conference I became well acquainted with George Utley, who was completing his seventh year as secretary of the A.L.A., and continued to enjoy his friendship until his death in the summer of 1945, after he had retired from the post of librarian of the Newberry Library in Chicago. This friendship meant much to both of us, and it was accented in the year I was president of the Association and was in daily contact for some weeks with Utley in Washington. There are not so very many men who improve on closer acquaintance, but Utley was one of them.

The A.L.A. met at Louisville in 1917. I attended for only a part of the sessions, running off to Lexington to see the trustees of the Public Library there about their permission for the proposed reproduction by the University of Michigan Library of the *Kentucky Gazette*, the first paper published west of the Allegheny Mountains, a file of which was in the Lexington Public Library. My brother-in-law, George Lee Burton, of Louisville, was very instrumental in securing the necessary permission to reproduce the newspaper, of which we published for

subscribers the portion covering the eighteenth century. Mr. Clements was very helpful in the financial part of this project—which was in the name of the University of Michigan Library, which also published a reproduction of the *Detroit Gazette*, the first newspaper in the state of Michigan, beginning with 1817, the year of the founding of the university—and incidentally we acquired much experience in large-scale photostating. I recall that at the sessions in Louisville the Library War Service and its uniforms were much in evidence and that there was much discussion over ways and means. I have always rejoiced that the librarians of the country rose to the occasion with their professional services, just as did the doctors and nurses. Herbert Putnam directed the Service with his customary ability, and Carl Milam came to the fore under him as assistant director. Walter Lewis Brown of Buffalo was president of the A.L.A., having presided over the Asbury Park meeting when vice-president and over the Louisville conference in his own right. I recall that I was chairman of the Nominating Committee and made a trip to see Brown at Buffalo to induce him to accept the office. Two years afterward he came to Ann Arbor on a similar errand. We did not intrust such business to the mails, as it is always easy to answer a letter in the negative but very much harder to refuse

a request made in person. During these years I was much engrossed in the plans for the new library building at Ann Arbor and its erection and gave but slight attention to A.L.A. affairs, even in the midst of war, which complicated our building problems enormously.

In July, 1918, the Association met at Saratoga Springs, New York, under the presidency of Thomas L. Montgomery, long state librarian of Pennsylvania and later librarian of the Pennsylvania Historical Society at Philadelphia. While I did not know Montgomery very well at this time, I later became much better acquainted with him and was continually surprised to find how he grew on one as the acquaintance ripened into friendship. Under a cloak of laziness he concealed a wealth of reading and an observation which were most impressive. He was a rather routine president of the A.L.A., notwithstanding the pressure of the war, which was very severe in early July, 1918. I recall that at Saratoga I got the Association to give discretionary power to the Executive Board in regard to the meeting for 1919, as it then seemed as if the war would grow in intensity before the fall was out. No one could foresee the sudden ending of the war in November, 1918. With my election to the presidency of the A.L.A., it seems fitting to conclude my recollections of the earlier years of my connection with its affairs.

THE INDEX OF ILLINOIS PUBLIC LIBRARY CIRCULATION

HERBERT GOLDHOR

THE University of Illinois Library School has developed, and is maintaining on a current basis, an Index of Illinois Public Library Circulation. Through the co-operation of the Illinois State Library, monthly reports of the index values are being published in *Illinois Libraries* beginning with January, 1948. The purpose of this statement is to present something of the background of the project, the procedure used in constructing the index, the method of current maintenance, and plans for its future development.

BACKGROUND OF THE PROJECT

An index number is essentially a percentage expression of the difference in measurements taken at different times, at different places, or of different units of the same class. The Index of Illinois Public Library Circulation (the Illinois Index, for short) consists of a series of index numbers (for the years 1938 to 1946 and for months since January, 1947) designed to reflect variations in the circulation of printed materials for home use by the public libraries of Illinois. In the Illinois Index the differences which are being measured are those between the circulation figures of Illinois public libraries in a base year, 1939 (or month), and in the current year (or month).

The original suggestion for this project came from Carleton B. Joeckel. Work was begun on the index at the University of Illinois Library School in the fall of 1946.¹ This report of the results to date is

¹ Grateful acknowledgment is hereby made to the following student-assistants: Marvin Baron, Marie Brader, Arnold A. Goldfaber, Lee Hull, and Leonard H. Siennick.

designed as a guide to others who may wish to apply this technique to similar data. The University of Illinois Library School has already begun construction of a national index of public library circulation, scheduled to appear in 1949, for which the Illinois Index has served as a pilot-model.

A librarian often has occasion to compare the circulation of his library with that of others. Thus, in the depression years American public libraries generally achieved peaks of circulation never equaled before or since. In the war period library circulation generally sank to levels lower than any of the last twenty years. In each case an individual librarian who might have thought that his institution was achieving a unique position would have had reason to modify that conclusion if he had known that other libraries, too, were reaching new peaks (or descending to low levels) of circulation. Usually such information can be secured only by word of mouth or through the reading of annual reports. The A.L.A. compilations of public library statistics have not included a uniform group of libraries and have not been prepared every year. The United States Office of Education compilations of public library statistics have been made at intervals of no less than four years.

It is the primary purpose of the Illinois Index to meet this need by reporting monthly on a current basis the percentage changes in the circulation of a group of libraries selected as representative of all the public libraries in Illinois. The Illinois Index attempts only to reflect changes in circulation; it does not ex-

plain why library circulation changes. It is hoped and expected that the index will make it possible for any public library in Illinois to compare its own percentage changes in circulation with those of all the libraries in the state (as reflected in the sample group on the basis of whose reports the monthly index is constructed). The index is calculated from the percentage that *each* library's current circulation is of its *own* circulation in 1939, in order to give each library an equal weight in influencing the index and to prevent large libraries from dominating the index solely by reason of their large gross circulation.

Two main cautions must be observed in using the Illinois Index. For one thing, circulation is not a complete record of library use or even a perfect record of one part of that use. Circulation figures say nothing as to the amount of reading done in the library or the number of reference questions answered, let alone the effects or quality of library service. Even for the home use of books, total circulation figures (and the Illinois Index measures only total circulation of juvenile, adult, fiction, and nonfiction books, periodicals, and pamphlets) are only a crude measure; to be meaningful, they should be analyzed by kinds of books circulated and related to kinds of readers, to mention only two other factors. The circulation of materials is, however, the main objective manifestation of public library service, and, until more refined methods have been evolved, it is likely to remain the most used measure of performance. The Illinois Index is designed to sharpen and implement the use of this measure.

The second caution relates to the validity of comparing the circulation figures of any one library with those of other libraries, many of which are greatly dissimilar in size, objectives, financial sup-

port, community characteristics, etc. The Illinois Index is a measure of average actual performance and does not necessarily constitute a standard or goal. The library which is unique or so different that it is unfair to compare it with other libraries will find no use for the Illinois Index. But the experience of the libraries in Illinois, as summed up by the index, should provide one basis of legitimate comparison for most libraries in the state, but not the only basis. Thus, a library whose percentage change of circulation is widely different from that recorded by the index is not necessarily a better or a poorer library. But the librarian of such an institution should seek to explain for himself the discrepancy so found. For example, in the years 1940-45, the public library of Rantoul, Illinois, had a percentage change of circulation (in comparison with 1939) consistently above that of most other libraries in Illinois. The explanation is probably to be found in the fact that the peacetime population of Rantoul (about twenty-five hundred) was swollen to ten times that figure by the growth of the near-by army air base, Chanute Field.

Hundreds of index numbers are in use in the business world and in other professions. One not-so-recent source² lists about two hundred and fifty economic indices, of which perhaps the most famous is the Cost of Living Index compiled by the United States Bureau of Labor Statistics and now known as the Consumers' Price Index for Moderate-Income Families in Large Cities. Such price indices involve various technical problems which are not encountered in the Illinois Index. Economic indices of general production or business activity,

² Donald H. Davenport and Frances V. Scott, *An Index to Business Indices* (Chicago: Business Publications, Inc., 1937).

e.g., the *New York Times* Weekly Index of Business Activity, are usually based on the combination of a large number of different series of data, again raising numerous knotty problems. The Illinois Index involves only one series of measurements which are relatively uniform and comparable.

On a lower level of complexity are the numerous indices of production or business activity in specific fields, e.g., indices of electric-power production, bank clearings, freight-car loadings, steel production, etc. These come closest to the type of index used here for library circulation, with one important difference. The economic indices are concerned with the gross production or activity in a particular field without regard to the distribution of that production between the unit electric-power companies, banks, railroads, or steel mills. The Illinois Index, on the other hand, is designed to reflect not the level of total book circulation but the current percentage change of circulation *per library* with reference to a base period.

Index numbers have been used in engineering,³ education,⁴ and even librarianship. Two important examples of index numbers of library data are to be found in the survey of the Chicago Public Library⁵ and in Herdman's study of public libraries in the depression.⁶ Probably the best writings on the technical problems of constructing index numbers

are those of W. C. Mitchell⁷ and Irving Fisher.⁸

PROCEDURE USED IN CONSTRUCTING THE INDEX

The description of the methods used in constructing the Illinois Index can be conveniently presented as answers to three main questions. (1) How were the original basic data secured for the total group of libraries? (2) How was the sample group of libraries chosen (on the basis of whose circulation reports the current monthly Illinois Index rests)? (3) How representative is this sample group of the total group of libraries in the state?

1. *How were the original basic data secured?* The main source of data was the annual statistics issues of *Illinois Libraries*, supplemented by reference to the original reports in the files of the Illinois State Library. The total annual circulation figure for each public library in the state was recorded for each year from 1938 to 1945 (and later to 1946). Most Illinois libraries report their circulation on the form provided by the State Library, which calls for the number of fiction and nonfiction books, periodicals, and pamphlets circulated to adults and children through the central library and all agencies. No attempt was made to go behind these reported figures. The incidence of differences between libraries, in regard to length of loan period, service to schools, number of books allowed per borrower, etc., is reduced by reason of the fact that each library's percentage change of circulation is calculated from

³ See the annual construction-costs issue of *Engineering News-Record* (usually in April).

⁴ Leonard P. Ayres, *An Index Number for State School Systems* (New York: Russell Sage Foundation, 1920); see also *Research Bulletin of the National Education Association*, X (May, 1932), 104-12.

⁵ Carleton B. Joeckel and Leon Carnovsky, *A Metropolitan Library in Action* (Chicago: University of Chicago Press, 1940), pp. 110-13, 213.

⁶ Margaret M. Herdman, "The Public Library in Depression," *Library Quarterly*, XIII (1943), 310-34.

⁷ Wesley C. Mitchell, *The Making and Using of Index Numbers* (U.S. Bureau of Labor Statistics Bull. 656 [Washington, D.C.: Government Printing Office, 1938]). This is a reprint without change of the essential portions of the 1921 revision of the original 1915 work.

⁸ *The Making of Index Numbers* (3d ed.; Boston: Houghton Mifflin Co., 1927).

its own circulation figure for the base period. Consistency of reporting by each library rather than strict uniformity between libraries is the important consideration.

Annual circulation figures were secured for 288 public libraries for the years 1938-45. These were 93 per cent of the public libraries in Illinois in 1938 and 75 per cent of the number known to exist in 1945. These 288 libraries accounted for 98 per cent of all public library circulation in 1938 and 97 per cent in 1945. The main reason for not including certain libraries in the total group for which circulation figures were known was simply that libraries established in or after 1938 would not have circulation figures for every year of the period studied, and therefore they could not have percentages calculated with reference to a common base period. Most of these 288 libraries serve incorporated places or townships; in all of Illinois there were only four libraries in 1945 which served several townships or as much as a county.

The base period for the annual index is 1939: for the monthly index, the corresponding month of 1939. The base year of an index should represent a period of normal activity and therefore one around which the variations in the index will tend to fluctuate. For technical reasons the base year must be changed from time to time so that it is not too distant from the current scene. Most indices use the same base year. For long, 1913 was the base year for many business and economic indices, later 1926 was the favorite, and now 1939 (or the 1935-39 average) is used. For libraries, as for America generally, 1939 was the last full year before the main effect of World War II was felt in this country.

All Illinois libraries do not use the same twelve-month period for their re-

port year, and most of them do not use the calendar year as the report year. Over four-fifths of the 288 libraries use a report year from May to April. In order to facilitate treatment of the data, it was decided to consider the circulation report of a library as being for that calendar year which included more of the months of the actual report year than did any other calendar year. Thus, the circulation figure for a library from May 1, 1938, to April 30, 1939, was considered as the cir-

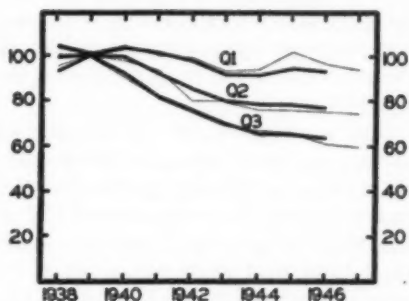


FIG. 1.—Annual circulation index values of 288 public libraries, 1938-46, and of a sample of 36 public libraries, 1938-47. (Circulation for 1939 = 100.) Q_1 = first quartile; Q_2 = second quartile or median; Q_3 = third quartile. For actual values see *Illinois Libraries*, XXX (January, 1948), 9-12; *ibid.*, February, 1948, pp. 89-92; and *ibid.*, March, 1948, pp. 127-29.

circulation report for 1938. About 5 per cent of the libraries have report years from July to June, and here it was arbitrarily decided uniformly to consider such data as being for the earlier of the two calendar years. Some violence was thereby done, but it was deemed necessary in order to have all data on the basis of the same time period, i.e., the calendar year.

After all the circulation figures for the 288 libraries for the years 1938-45 had been recorded, the percentages of change were calculated for each library with reference to its own 1939 circulation. Figure

1 shows, among other things, the median and other quartile values of these percentages for each year for the total group of 288 libraries. The main interpretation of these data is simply to the effect that the average library in Illinois lost about one-fifth of its circulation between 1939 and 1944 and has not recovered any of this loss yet. The median has been used consistently in the Illinois Index as the measure of central tendency in preference to the arithmetic mean. This was done because the mean is heavily influenced by extreme values, and, in the nature of percentages, extreme values at the upper end of the range are almost inevitable.

Strictly speaking, the median annual circulation percentage—the index number of Illinois public library circulation—represented by the median line of Figure 1 for the total group of libraries for 1938-45, is to be read as follows: in 1945, for example, one-half of the libraries in Illinois reported a circulation figure which was less than 78 per cent of what those same libraries' circulations had been in 1939, and one-half of the libraries had 1945 circulations which were more than 78 per cent of what those same libraries' circulations had been in 1939. Such an index number gives equal weight to each library, and each library influences the index number, not by the absolute size of its circulation, but solely by the degree to which the ratio of its present circulation to that of 1939 is greater or less than similar ratios for other libraries.

Since the median is used as the measure of central tendency, quartiles must be used as measures of dispersion in preference to the more usual standard deviation. The first and third quartiles of Figure 1 indicate the limits within which are to be found the percentages of change for the middle 50 per cent of the 288 li-

braries. The farther one gets from the base year, the greater the dispersion of values. This is a characteristic of all index numbers and is one of the reasons why a new base year must be chosen from time to time. A new base year will probably have to be chosen for the Illinois Index around 1950. Use of the median and quartiles has been made with full recognition of their limitations; e.g., as a measure of central tendency the median is relatively insensitive to changes in the data, and, when it does react, it moves at once to another whole raw value. Where the number of items is relatively large and where the total range of values is relatively small, as is true here, these limitations are not serious.

2. *How was the sample group of libraries chosen?* Given the 2,304 circulation percentages (288 libraries for eight years) for the total group of libraries, the following decisions as to sampling procedure were made in the course of time. The basis of the sample to be chosen was the very quality aimed at, viz., accuracy in reflecting the variations of the total group of libraries in annual changes of circulation. By a method, to be called the "net deviation" method, a unit of measurement was found by which the fluctuations of the circulation percentages of each library over the eight years could be summed up. The universe of 288 libraries was then cast into an array by the order of magnitude of this measure, and a sample of libraries drawn off by choosing every eighth library from such an array. The determination of the adequacy of the sample lay in the purely pragmatic test of the closeness of fit of the annual index numbers of the sample and those of the universe.

Originally it had been thought to secure the sample of libraries by stratifying the universe according to geographic lo-

cation, population served, size of book-stock, and amount of financial expenditures. Not only were the necessary data difficult or impossible to secure for every year, but the use of such categories rests on the assumption that these are the factors responsible for fluctuations in library circulation. After some experimentation, it was decided to use as the basis of sampling the very measure desired as the end-goal, viz., faithfulness in reflecting the variations of the universe. It is considered that this is one of the most important lessons learned in this project.

The next problem was to find a measure by which to express the fluctuations in circulation of each library in the universe over eight years. This was done by what is here called the "net deviation" method, in the following manner:

a Given the circulation percentages of all 288 libraries for each of eight years, the mean percentage was found for each year.

b Given the mean annual circulation percentage, the deviation of each library's circulation percentage from the mean of each year was found, some of these deviations being plus and some minus. Use of the arithmetic mean equates the sum of the minus with the sum of the plus deviations.

c Given a signed number (+ or -) as the deviation of each library's circulation percentage each year from the mean annual circulation percentage of that year, these deviations were added up for the eight years, taking account of sign, to give (what is called) a net deviation for each library for the whole eight-year period. This net deviation varied from +972 to zero to -346. It expressed in one figure some of the characteristics of each library's circulation percentages over the eight years with reference to the

circulation percentages of all other libraries in the universe.

Once the universe of libraries was stratified by the magnitude of net deviation of each library, a sample of thirty-six libraries (every eighth one) was drawn off. Where more than one library had the same net deviation, random chance determined which would be chosen. It was found empirically that a smaller sample of thirty-two libraries (every ninth one) gave distinctly poorer results, and it would be necessary to use a larger sample of forty-eight items (every sixth one) to secure better results than with the sample of thirty-six.

It is possible to point out theoretical deficiencies in this "net deviation" method. For example, the method reflects the average position of any one library with reference to the mean annual circulation percentages of the universe but does not indicate the direction of a consistent difference, if any exists, between the library and the universe. Twenty-four samples, involving at least three different methods of summing the variations of the individual libraries' circulation percentages, were tried. The sample finally used (based on the "net deviation" method) was chosen because the pragmatic results so secured were more favorable than was true of any sample selected by any other method.

3. *How representative is this sample?*
The usual procedures for determining the representativeness of a sample from a known universe involve calculation of the standard error of the mean of the sample and of the critical ratio of the difference between the mean of the sample and the mean of the universe. Such procedures assume that a graph of the values or data in the universe will approximate in shape the normal bell-shaped curve. In this case it was known that the data

for the total group of libraries form a decidedly abnormal or skewed distribution. The usual procedures for determining the representativeness of the sample could not therefore be used. As a result, the next best test had to be employed, namely, the pragmatic results of comparing the fluctuations of the sample with those of the universe.

The quartile values of the circulation percentages of the sample of 36 libraries were calculated and compared with the equivalent values for the total group of 288 libraries for the years 1938-45. The average difference between the two series of data, per quartile value per year, was 1.38 index points (see Fig. 1). Upon this finding the sample was chosen as the basis for the calculation of the monthly index of circulation. Later the data for the universe for the year 1946 became available.⁹ When the sample was compared with the universe for that year, the average difference between the two series per quartile value was found to be 2.07, and the 1938-46 average difference between the sample and the universe became 1.47 index points. The 1946 difference between the sample and the universe is less than that for 1945 (3.33 per quartile). However, in this first check yet available on the behavior of the sample, the latter is found to be less accurate in reflecting the variations of the universe than it had been on the average in previous years. Continuing checks of this kind will be made in the future.

The possibility exists that the sample used will become even less representative in the future. Furthermore, it is true that the sampling methods tried were tested by only a few samples; theoretically, these samples may, by random error, have been extreme cases and not fair

tests of the methods by which they were selected. No practical alternative was found, however, to the choice of sample and sampling method on other than pragmatic results. And an inspection of Figure 1 will reveal that the sample used is so close and consistent with the universe that little additional improvement could be reasonably expected. It is assumed that the sample is as faithful in reflecting the universe of libraries on a monthly as on an annual basis.

It will be remembered that the sample was chosen solely by an automatic procedure designed to produce a group of libraries statistically representative of the universe. After the sample was selected, however, it was compared with the universe in regard to the distribution of libraries by geographic location and population served. The differences between the sample and the universe by geographic location—using the six library regions of the state established by law—were such as could be caused by random chance (twelve times out of a hundred).¹⁰ The differences between the sample and the universe by size of population served (using six population classes) were such as could be expected by chance only once in a hundred trials. In general, the sample has more libraries in small towns than is true of the universe. This is taken to mean that *changes* in library circulation (apparently measured accurately by this sample) are essentially the same, regardless of the size of population served.

CURRENT MAINTENANCE AND FURTHER DEVELOPMENT

The Index of Illinois Public Library Circulation has been maintained on a

¹⁰ A difference which could be caused by chance no less than five times out of a hundred trials is usually considered a safe lower limit for identifying a representative sample.

⁹ At the time, data were actually secured for only 283 of the 288 libraries in the universe.

current monthly basis since the beginning of 1947. A report of the index values appears each month in *Illinois Libraries*. The procedures for preparing the current monthly index are as follows.

At the beginning of the month each library in the sample¹¹ is sent a post card on which to report the total number of books, periodicals, and pamphlets circulated to children or adults in the previous month. These reports are usually returned in two weeks. Each library's circulation figure is divided by its own circulation for the corresponding month of 1939, to secure its circulation percentage. The use of the circulation figure for the corresponding month of 1939 as the base for this percentage serves to eliminate in large part the influence of seasonal changes in library circulation.

After the current circulation percentages are calculated for all thirty-six libraries, they are arranged in order of magnitude, and the quartile values of the series are found by the usual methods. These values are then sent to the Illinois State Library for publication. Specific directions for the interpretation and use of the annual and monthly index values have appeared in the first four issues of *Illinois Libraries* for 1948.

At present it is planned to develop this index technique along three main avenues. For one thing, continuing studies will be made of the statistical methods used. As data become available each year for the total group of libraries, a check will be made of the accuracy of the sample in representing the universe. The adequacy of simpler sampling methods than that used here will be investigated. Several of the statistical procedures employed can be improved as more data are accumulated—for example, the present

method for removing the seasonal influence in the construction of the monthly index. A particularly interesting possibility is the reporting of the index values not with reference to a constant base period (e.g., 1939) but to the preceding year which is more nearly like the way librarians usually evaluate reports of current circulation.

A second main development is the extension of the index technique to the construction of a national index. Work has already been begun at the University of Illinois Library School on the preparation of an index of American public library circulation. This national index is restricted to the four hundred libraries in cities of over 25,000 population in 1940. By the methods described above in connection with the Illinois Index, a sample group of libraries for the nation will be similarly chosen and invited to send the reports of their monthly circulation to the University of Illinois as the basis of the national index. Publication of the national index is tentatively scheduled for 1949.

The third main line of development lies in the exploration of the implications of the index values themselves. When data for a second census year (1950) are available, changes in per capita circulation will be studied. The Illinois Index promises to throw some light on the hypothesis long held by librarians that there is a high inverse correlation between business employment and library circulation. The correlation between the median values of the Illinois Index and the Index of Employment in Illinois Manufacturing Establishments,¹² for the years 1938-47, is $-.51$ (Spearman's rank correlation coefficient). The correlation between the monthly values of the two

¹¹ For the list of the thirty-six libraries see *Illinois Libraries*, XXX (1948), 92.

¹² Compiled by the Illinois Department of Labor and reported in its *Illinois Labor Bulletin*.

indices, calculated when data for the former were available only from January, 1947, through March, 1948, is maximized at $-.64$ (Spearman) when the two series are so arranged that there is a seven-month time lag between the employment index and the index of circulation. When a sufficient number of monthly values of the Illinois Index are accumulated, it may be possible to confirm and improve this correlation and perhaps even to predict changes in public library circulation.

The possibilities of the application of Joeckel's original suggestion are far from

exhausted. The Illinois Index and the proposed national index measure gross circulation only. Appropriate indices can be set up for subgroups of adult and juvenile circulation, or fiction and non-fiction. Other aspects of public library services and administrative operations may be similarly measured, e.g., book accessions, registration of borrowers, financial support or expenditures, personnel turnover, salaries, etc. The index technique is equally applicable to the data of school, college, university, or special libraries.

THE COVER DESIGN

PROBABLY in the fall of 1487, Ludovicus Ravescot began printing at the University of Louvain. He seems to have succeeded Egide vander Heerstraten as university printer. Certainly, he was in possession of printing materials once used by a still earlier holder of that office, Jan Veldener.

Ravescot, almost immediately after setting up in business, issued a book, the *Opus responsivum*, by Petrus de Rivo, professor of theology at Louvain. Rivo published the book in reply to one written by the Bishop of Fossombrone, Paulus de Middelburgo, with whom he was having a controversy on the question of the exact date of the Passion of Christ. The printing of Rivo's book showed Ravescot to be a skilled craftsman possessed of ample capital.

Before beginning the printing of this, his first book, Ravescot went to the expense of having cut two printer's marks. One was small. It was a portrait of the printer standing beside a bear. The bear holds the arms of Louvain; the printer, a shield on which is his name interlaced about a triangle. Between them is Ravescot's merchant's mark, a combined regular and X cross—in this mark encircled wheel-fashion. This device was placed at the colophon of the book.

The other mark, a large woodcut, here reproduced, was placed on the title page—the Virgin, crowned, holding the Child, stands in

a church, against a richly decorated screen beneath an arch. She is venerated by the printer, who petitions her: "Assist: ad. inceptum sca. Maria: meum ('Holy Mary, help me in the undertaking I have begun')." Above the arch are the arms of Louvain and Ravescot's merchant's mark, here based like a cross.



A device like this, which enabled a portrait of the printer to be shown in a devout attitude, was used by several printers. One of these printers was Willem Vorsterman, whose mark appeared earlier (January, 1947) in this series.

Although Ravescot's printing career began auspiciously, it ended quickly. It may, indeed, have lasted but a few months. In all, his known productions consist of three books, Rivo's *Opus*; Bonus Accursius' *Compendium elegantiarum Laurentii Vallae* [1488], a grammatical work intended, no doubt, for the use

of the university; and the *Visio lamentabilis heremilae Fulberti* [1488], a Latin poem describing the debate between the body and soul of a man doomed to hell. Besides these books, Ravescot printed two placards on the valuation of money. These five items, totaling 120 leaves, comprise all Ravescot's known productions. Some disaster, perhaps death, apparently cut short his printing career near its beginning.

EDWIN ELIOTT WILLOUGHBY

FOLGER SHAKESPEARE LIBRARY

THE CONTRIBUTORS TO THIS ISSUE

WILLIAM WARNER BISHOP: for biographical information see the *Library Quarterly*, I (1931), 338; IV (1934), 359; XII (1942), 762; XIV (1944), 339-48; XV (1945), 324-38; XVIII (1948), 1-23, 185-91.

FRANCIS X. DOHERTY is librarian of the Anacostia branch of the District of Columbia Public Library. For additional biographical information see the *Library Quarterly*, XVIII (1948), 283.

HERMAN H. FUSSLER, director of the University of Chicago Library, was born in Philadelphia in 1914. He was graduated from the University of North Carolina and from its school of library science and obtained his Master's and doctoral degrees from the Graduate Library School of the University of Chicago. After a short time as an assistant in the science and technology division of the New York Public Library, he came to the University of Chicago in 1936 to head the library department of photographic reproduction, and from 1941 to 1946 he also served as science librarian. Since 1941

he has been a member of the staff of the Graduate Library School.

During the war years Mr. Fussler was assistant director of the information division and librarian of the Metallurgical Project (atomic energy) and served as consultant to the Manhattan District on the handling of scientific information. In 1937 he headed the demonstration of microphotography at the Paris International Exposition and was a delegate to the World Documentation Congress, which met in Paris the same year. A year later he was a delegate to the fourteenth International Conference on Documentation, which met in London and Oxford. From 1938 to 1942 he was associate editor of the *Journal of Documentary Reproduction*. In addition to numerous articles in professional journals, he is the author of *Photographic Reproduction for Libraries* and is editor of the recently published *Library Buildings for Library Service*.

HERBERT GOLDHOR: for biographical information see the *Library Quarterly*, XII (1942), 286; XIII (1943), 246; and XVII (1947), 233.

REVIEWS

Zentralblatt für Bibliothekswesen, Jahrgang 61, Heft 1-2. Leipzig: Otto Harrassowitz, 1947.

The *Zentralblatt für Bibliothekswesen* has been one of the leading periodicals in our field. Succeeding the *Serapeum* (1840-70), it was founded by Otto Hartwig and Karl Schulz in 1884 and became the official organ of the German Library Association. Among its chief editors were scholars of international reputation like Paul Schwenke and Georg Leyh, and its sixty volumes and more than three scores of *Beihefte* contain a wealth of information which is hardly surpassed by any other library journal. The scholarly scope of the *Zentralblatt* was very broad, embracing all disciplines which bore some relation to the study of books, their history and use, although historical studies had a distinct edge over technical investigations. The possible application of this research, however, was rather narrow: it was primarily meant for research libraries. Little attention was given to the problems of the *Volksbücherei*, a term which is only linguistically synonymous with the American conception of a public library.

Like all German periodicals the *Zentralblatt*, too, had ceased publication during the last year of the war. The information that the famous German periodical is being republished has been greeted everywhere with great professional satisfaction as a sign that our German colleagues are successfully rebuilding their institutions and are ready to work together with us on the solution of common professional problems. Dr. Leyh, formerly director of the University Library, Tübingen, has retired from active service, and Dr. Joris Vorstius (Berlin) is listed as the new editor. The leading editorial sketches the immediate objectives of the journal: (1) communication and co-operation between all German libraries in their efforts to reconstruct their institutions, (2) strengthening the professional and ideological unity of German librarianship and re-establishment of connections with foreign libraries, (3) integration of public library and research library in their joint responsibilities as educational institutions for the nation.

The last paragraph presents a brief answer

to the question: "What constitutes Library Science?" Vorstius objects to the emphasis on the historical aspects of libraries and books and proposes to include everything "which belongs to the scholarly investigation of the phenomenon, library." As libraries not only possess but also circulate books, the definition is reached: "Library science is the science of the diffusion of knowledge through public institutions" ("Bibliothekswissenschaft ist also die Wissenschaft von der Erschliessung der Literatur in öffentlichen Literatursammlungen"). The history of books is recognized as a legitimate part of library science "but by no means the most important." Priority is given to "the intellectual connotations of books, to such problems as the origin and diffusion of literary culture, the history of literary tradition, standards for the evaluation of literature, the importance of libraries in the history of civilization, etc. Also, certain topics of library administration, for example, cataloging theory, utilization of music and maps, might receive . . . as honorable a place as bibliography, documentation, and the history of scientific literature." ("Denn uns geht es in erster Linie um Literaturserschliessung, also um die geistige Seite des Buchwesens, um Probleme wie Entstehung und Ausbreitung der literarischen Bildung, die Geschichte der literarischen Tradition, die Massstäbe zur Bewertung der Literatur, die Bedeutung der Bibliotheken in der Geschichte der Zivilisation u.a.m. Auch bestimmte Themen der Bibliotheksverwaltungslehre, z.B. die Katalogtheorie, die Auswertung von Musikalien und Karten, dürften in der Bibliothekswissenschaft, wenn sie Wissenschaft von der Literaturschätzung sein will, einen ehrenvollen Platz erhalten ebenso wie die Bibliographie, die Dokumentation und die Geschichte der wissenschaftlichen Literatur.")

The first part of this definition will hardly be contested. In spite of the invaluable services rendered by Dziatzko, Haebler, Schramm, Schwenke, Zedler, etc. (to mention only a few from whom we all have learned so much), we realize that the main interest of this generation of scholars was focused on the externals of

books and their production—history of printing, paleography, history of binding. In keeping with the general trend in all historical investigations (*Geistesgeschichte*), librarians, too, find a greater challenge in conceiving of books as carriers of ideas than in describing their form. There is nothing revolutionary in this aspect of scholarly librarianship: investigations of this type have increasingly been carried on during the last twenty years.

Of the three major approaches to library science as a field for scholarly investigation, one phase, the historical, is again overemphasized. Whether we investigate the history of printing or the origin and history of literary culture, it is still historical investigation. The majority of the research topics cited as examples by Vorstius are historical ones. All these problems form a legitimate part of the first—the historical—approach to library science.

The second major approach—from the American viewpoint the most important—is the study of library activities proper and their administration. Vorstius is here extremely eclectic—"also certain topics of library administration." A discipline that professes to study "the phenomenon, library" should include *all* topics of library administration. Moreover, Vorstius' selection of such examples as "cataloging theory, utilization of books and maps" is somewhat strange, especially if compared with the curriculum of an American or English library school. We may assume that "cataloging theory" pays some respect, at least in *generalibus*, to the study of technical operations. But seemingly the many aspects of readers' services are not yet deemed worthy of scholarly investigation. The many aspects of modern American librarianship as revealed in the chapter headings of any recent library survey are surely in significant contrast to Vorstius' "certain topics."

The third major approach, the sociological, investigates present-day libraries as social phenomena, their relation to the community they serve, their implications for the national educational system of which they form a part, and their responsibilities toward the world at large in their preservation and propagation of the basic values of humanity. Such matters, dealing with the influence of libraries, suggest investigations of reading habits and reading psychology.

In these three fields of concentration an attempt is made to find an answer for a triple set of fundamental questions: How did libraries

develop? What are libraries doing? Why do we have libraries?

The definition of library science given by Vorstius treats the first question amply, barely touches the second, and neglects the third. In the past German librarians have made valuable contributions to all three questions, although Vorstius is undoubtedly right in deploring the overemphasis on history. However, his own definition of library science will hardly be instrumental in making German librarians less history-minded and more realistic (*lebensnah*).

Professor Sergej I. Vavilov, president of the Russian Academy of Sciences, contributes "Some Remarks about Books," previously published in a Russian library journal. Like all scholars, Vavilov is much concerned about the insufficient bibliographical control of the gigantic book collections and book production of the world. All his points, such as a world bibliography, world union catalogs, and international co-ordination of scientific reviews—although at present unfortunately only *pia desideria*—are well taken and deserve thoughtful consideration. However, one of his remarks cannot be passed over without the strongest objection being voiced:

It is clear that the evaluation, criticism and review of the book must already start when the publication is still in manuscript form. It is generally known that unfortunately the author is in most cases a bad judge of his own work (both in the positive and negative sense). Frequently he does not notice his mistakes, knows nothing of the preceding literature, repeats himself, cannot master the subject-matter, or simply errs in his statements.

The superman who will remedy this bad situation is the "editor." Is *Politbureau* implied in place of "editor"?

Georg Leyh contributes an extract from his book *The German Libraries after the War* (see the extensive review by Pierce Butler in *Library Quarterly*, XVIII [April, 1948], 120-23), and Heinrich Uhlendahl publishes his dignified and unbiased address at the formal opening of the exhibition "Books of the Emigration" (Leipzig: Deutsche Bücherei).

"Bibliotheksgeschichte des Mittelalters," by Karl Christ, is an excellent analysis of the basic historical principles for a history of medieval libraries. Dr. Christ is well known as the author of the medieval section in the historical part of the *Handbuch der Bibliothekswissenschaft* (III, 90-285). The main points of the paper are the intimate relations between library his-

tory and universal history, the geographical limitation of the term "medieval" to European libraries, and the breakdown in terms of Early, Middle, and High Middle Ages. The evolution of the medieval library system is well sketched:

From the simple form of the early Christian period, which had inherited from classical antiquity the combination of temple and library, evolve the great monastic libraries. Book collections of universities, of princes and private persons, joined in ever richer ramification from the XIII century on. With the growing realization of the educative value of the library, the number of founders, owners, and users increases. The patronage, originally limited to the few clergymen of a community, spreads, it extends to the laity, and finally includes all strata of educated men.

Walter Hofmann investigates the theoretical assumptions of an international classification system. He reasons that no universal classification system can be built entirely along strictly logical lines. The logical sequence is frequently influenced by "value" questions, issues which are intimately related to the Weltanschauung of a specific national culture. Therefore, a system developed on the basis of the national culture of people "A" will be meaningless to people "B," hence an international classification system, meaningful to the entire world, is unthinkable.

Hofmann has meticulously analyzed all parts of his carefully built-up conclusion except one conception—the validity of which he takes for granted without question—and that is the existence of national cultures which are elevated to the rank of living individuals. However, are *the* German, *the* American clearly definable realities as distinct from each other as is Mr. A. from Mr. B? What are the so-called "national characteristics," a term so glibly used? And to what extent are they relevant to the classification of books? Are we logically justified in labeling everything American as "foreign," from the point of view of German culture?

Furthermore, nationality is not the only, and by no means the most important, basis for dividing humanity into groups. Religion (for centuries all important in this respect), occupation, political ideology, education, income, color of the skin, sex, and age are much more potent nuclei for group formation. All these groups cut across national boundaries, and, following Hofmann's train of thought, would make a national classification system as meaningless as an international one. However, before we draw any con-

clusions in this respect, we need to know much more about the sociological characteristics of groups and their significance in terms of book classification.

The remainder of the issue brings interesting information about recent meetings of German librarians, a list of head librarians of the major German libraries, and a short bibliography of recent contributions to the field.

It would be unfair to criticize the scholarly contributions of German librarians without taking into consideration the extremely difficult circumstances under which our German colleagues operate. It is less the terrific physical destruction than the moral, mental, and linguistic confusion caused by fourteen years of Nazi government—a confusion which has not been mitigated by the conflicting ideologies of the different military governments.

FELIX REICHMANN

Cornell University Library

The Story Up to Now: The Library of Congress, 1800-1946. By DAVID C. MEARNS. Reprinted from the *Annual Report of the Librarian of Congress for the Fiscal Year Ending June 30, 1946*, with the addition of illustrations and a slight revision of text. Washington: Library of Congress, 1947. Pp. iii+226.

"And so God send the good Ship to her desired Port in Safety." So concluded the bill of lading of December 9, 1800, covering the first purchase of books for the Library of Congress. And so say we all. The good ship is now vast and commodious, of majestic beam and burthen, guided by an extremely able master, who is supported by mates and crew of unusual competence. Now her log has been conned by a chronicler who knows his library currents and trade winds. He and his colleagues know what the desired port is, and they have laid sure hands on the tiller (which by now has become a Sperry gyroscopic compass, plus radar equipment).

The writing of institutional history is an exacting task, requiring talents well above the ordinary to rescue even the best and most important of subjects from trivial antiquarianism or appalling dullness. Just as the operation of a library is one of the most complicated and difficult of enterprises, so the business of plowing through mountainous library records of the past and selecting the relevant and significant, rejecting the unimportant, places an unusually

heavy responsibility upon the historian. Admittedly, David Mearns had a captivating subject, one whose importance would make even an indifferent treatment worth attention. But his is far from being an indifferent treatment. Indeed, though he modestly calls it a story rather than a history, he has produced a classic. It is worthy of serious attention by historians of political, religious, legal, and other social institutions, and it goes without saying that it is required reading for all librarians who desire a perspective view of their profession. Beyond this it ought also to be required reading for every member of Congress. Others have essayed the task that faced Mearns and have perhaps more formally attempted a history of our national library, but his story is, for all its brevity, the clearest and most penetrating analysis of its growth yet made. It is also the most interesting, being written in a style and with a maturity of judgment that unhappily are none too common in the literature of the profession.

His principal theme is the evaluation of a concept—how a collection of books for the use of members of Congress became, with the passage of time and as a result of historical necessity as well as national pride, our national library. Had the institution been named the "American Library" or the "Library of the United States" in the beginning, much of the story of the growth of the concept of a national library would have been unnecessary. There may have been, as always, those who would have joined the anonymous contributor to the *Independent Chronicle* of Boston in 1790 in asking: "Could anything be more foreign to the real business of Congress? What connection has a Library with the public? With our Commerce; or with any other national concern?" But even this extreme view, in a day when libraries were regarded to a large extent as cultural ornaments and not as indispensable necessities in the conduct of war or peace, was not universal. There were also those who declared then and later that "a good library is a statesman's workshop" or, in the words of the *Daily National Intelligencer* of 1823, "We do hope that the wisdom and liberality of Congress will . . . make such regulations for the increase and utility of this noble institution as will contribute greatly to the improvement of our country, and will increase our respectability in this respect, in the eyes of foreign nations. . . . There should be no work of high character and unquestionable utility, published in any part of the world, which ought not,

in time, to find its way into the National Library of the United States."

It was the play and counterplay of these two attitudes that make up the theme of Mearns's story. No one today seriously questions the absolute necessity of the Library of Congress as an instrument essential to government or as a cultural institution of incalculable importance to the American people and to the world. But the narrowness of the view expressed by the *Independent Chronicle* is still in part entertained and too often has prevailed over the enlightened view expressed by the *National Intelligencer*. Mearns has provided responsible statesmen with an analysis which links a great achievement in the past to a great opportunity—and responsibility—in the future. Let us hope that the Congress will study this perspective soberly and responsibly and with a determination to provide the national library with resources adequate to its needs. The magnificent accomplishment of the past, achieved with relatively slender funds, is the best of arguments for ample support in the future as the Library faces its immense responsibilities as a force in government and in the lives of the people. Representatives of the people would do well to ponder Mearns's comment upon the situation of the Library of Congress in 1824:

From the perspective of nearly a century and a quarter, this legislation and the report which led to its enactment have a nostalgic quality which identifies the present with tradition. Then, as now, the annual book fund was sufficient only to the maintenance of subscriptions and to the procurement of the current products of the press. Then, as now, the lack of adequate provisions forced neglect of materials of retrospective and antiquarian interest. Then, as now, there was that realization of "the absolute necessity of an extensive and judiciously selected library." Then, but fortunately now a little less, there were, in some quarters, misgivings concerning the actual utility of literature presented in languages other than our own. Then the problems were microscopic; now they are magnified; but they are the same problems and they are familiar.

Representatives who have the responsibility of legislating for the general welfare should also ponder Mearns's further penetrating observation: "Over and over again experience has made postponement [of timely support] profligate."

In illustrating the institutional metamorphosis of a collection of books for the use of Congress into a national library, Mearns has been singularly adept at making even familiar names live as vivid personalities. A single bio-

graphical fact, a brief quotation, or a word of description in his hands evokes an unforgettable portrait of the various Library of Congress figures from Beckley to "the brush of the comet" that was MacLeish. Three of these—Meehan, Spofford, and Putnam—directed the Library growth for more than a century, and the portraits drawn by Mearns of these three are admirable characterizations, particularly that of the remarkable and fascinating Spofford.

If Mearns's narrative contains lessons for the statesmen, it also contains warnings for Librarians of Congress. Watterston, he points out, "had been brilliant, he had been industrious, he had accomplished fine and often constructive purposes, but he had been Librarian of one side of the aisle rather than Librarian of Congress." Fortunately, the able men who succeeded Watterston lifted the Library of Congress above partisanship. The present Librarian of Congress, though his vigorous direction of the Library as a national and international force does not form a part of Mearns's narrative, has also stood steadfastly and courageously against demands in certain quarters of government for secrecy and witch-hunting.

Such an inspiring record deserves a better format and greater dignity of presentation than that of a reprint bound in paper covers. Mr. Mearns's essay was a splendid background for the 1946 annual report of the Librarian of Congress, but it also deserves to stand alone as a well-bound, well-designed book.

JULIAN P. BOYD

Princeton University

Annual Report of the Librarian of Congress for the Fiscal Year Ending June 30, 1947. Washington: Government Printing Office, 1948. Pp. 181.

To review a report of the Library of Congress is not an easy task. The reviewer is never quite clear whether he is reviewing the report as a report or reviewing the record of the Library as an operating agency. Doubtless his proper duty is to evaluate the report as a piece of writing on an important library subject. This reviewer, however, cannot wholly concur in quite so strict a construction of his assignment. Although he is keenly interested in the methods and techniques of library reporting, he must confess to an even greater interest in the welfare of the Library of Congress as an institution.

But let us look first at this important document simply as a piece of reporting. Chief Assistant Librarian Verner Clapp, to whom Librarian Luther Evans generously assigns the principal credit for developing and drafting the report, and the other library officers associated with him have performed their task with distinction. The 1947 report is much less formidable in bulk than that for the previous year, but the 1946 report contained two special features not repeated in 1947—David Mearns's highly readable history of the Library entitled "The Story Up to Now" and the long reprint of the "Justification of the Estimates, Fiscal Year 1947." Otherwise, the two reports are rather closely comparable in length and general organization.

The student of exposition in writing on library subjects may well use this report as a model. It is well organized, clearly and forcefully written, and documented with discrimination. If the hasty reader (there should be none!) wishes a concise yet penetrating summary of the major events of the Library's year, he turns to the Introduction. If he desires more details in his own special field of interest, he turns to one of six subsequent chapters dealing with the operations of the Library. If still more facts are needed, there are nineteen appendixes providing a multitude of details. If he desires a visual understanding of the administrative structure of the Library, he refers to the organization chart exhibiting the departments and divisions, with the number and grades of the staff in each. If he wishes to pursue his study of the Library beyond the report itself to the source materials, he is provided with lists of general orders and publications and records of concerts and exhibits. And, finally, if the reader requires only a single fact, he consults an index of almost nine hundred entries, covering pretty much everything from "Constitution of the United States" to "Communism in Action."

More important than these details, however, is a judgment of the selection of materials included in the report and the objectivity with which the essential facts, favorable or unfavorable to the Library, are reported. On this point the reviewer's reaction is again most favorable. Skilful topical introductions to chapters and subdivisions orient the reader quickly in the essential subject matter of each unit of the text. Internal evidence seems to stamp the reporting as thoroughly objective. Not only successes but also failures and shortcomings are carefully re-

corded. The report is punctuated by an almost distressingly long list of negative synonyms, such as "eliminated," "still before Congress," "shortage of staff or funds," "a considerable backlog of work," and many other phrases indicating suspended functions or arrearages in work. Clearly, the administration is keeping close watch on the major and minor operations of the Library.

And now the reviewer may be permitted to extend his function somewhat and comment on a few aspects of the report which specially interested him. One sharp reaction can be summed up in an exclamation: What a labyrinth of detailed records and processes a great library is! As one reads about the arrearages in this record or that process, he is forced to speculate again and again on how many staff members and how many dollars would be required to keep every record, every process, strictly up to date. Think what administrative shock would occur if every department and every division head were to step into the Librarian's office on June 30 of any fiscal year and proudly report: "Sir, the records and processes for which my department or my division is responsible are complete as of today!" How long can this Library—or any great library—hope to match its monumental system of records with a commensurate labor force? This reviewer leaves the question unanswered.

Another topic of absorbing interest on which the reviewer might speculate is the activity of the Library of Congress in co-operative enterprises. He began a detailed list of examples of co-operative projects in which the Library has been concerned—co-operation with other libraries, with foundations and learned societies, with agencies of the United States and foreign governments, with library associations, and with other groups. The idea was abandoned because the record was too long for inclusion here and because it was only too probable that important items might be overlooked. Suffice it to say that the Library of Congress is very likely to be concerned in any major scholarly co-operative enterprise involving bibliographic controls, cataloging or classification, acquisition of materials, or special reference services. The administration and staff of the Library are obviously keenly alert to their responsibilities in this important field.

Finally, there comes the question which is in some danger of becoming perennial in this period of Library of Congress history: Is the Library the *national* library? As long as this ques-

tion remains unanswered, many decisions on library policies must be deferred. This year's principal contribution to the Library's defense of its status as the national library is the "Library of Congress Planning Committee Report," published in full as an appendix to the report. This important document in the history of the Library was drafted by a special committee of librarians and scholars appointed by the Librarian and headed by Keyes D. Metcalf. On the question of the Library's status, the committee was positive in its recommendation that the Congress "recognize by Resolution that the Library of Congress is in fact the National Library of the United States and that, whenever its name appears in print on official publications or on its own letterhead, it be stated as 'The Library of Congress, the National Library of the United States of America.'"

The issue is as yet unresolved. In the Librarian's own words, "the matter is still before the Congress." Friends of the Library of Congress will join in hoping that the correct decision will not be too long delayed.

CARLETON B. JOECKEL

*School of Librarianship
University of California*

Twelfth Annual Report of the Archivist of the United States for the Year Ending June 30, 1946. Issued by the NATIONAL ARCHIVES. ("Publication," No. 47-4.) Washington: Government Printing Office, 1947. Pp. v+99.

Thirteenth Annual Report of the Archivist of the United States for the Year Ending June 30, 1947. Issued by the NATIONAL ARCHIVES. ("Publication," No. 48-6.) Washington: Government Printing Office, 1948. Pp. vi+92.

Seventh Annual Report of the Archivist of the United States as to the Franklin D. Roosevelt Library, Hyde Park, N.Y., for the Year Ending June 30, 1946. Issued by the NATIONAL ARCHIVES. ("Publication," No. 47-2.) Washington: Government Printing Office, 1946: Pp. ii+14.

Eighth Annual Report of the Archivist of the United States as to the Franklin D. Roosevelt Library, Hyde Park, N.Y., for the Year Ending June 30, 1947. Issued by the NATIONAL

ARCHIVES. ("Publication," No. 48-5.) Washington: Government Printing Office, 1948. Pp. iii+19.

From these two annual reports about the National Archives proper we learn of the archival aftermath of the war years and of the gargantuan task it constitutes: 12,000,000 cubic feet of records, nearly 30,000,000 running-feet of motion pictures, more than 1,250,000 "stills," and many sound recordings. In comparison, most of the accumulations of book importations currently facing librarians shrink into moderate size. The first phase of the archivist's problem is the determination of the core of records essential to keep for policy or long-term historical significance. This may prove to be not over 1,000,000 cubic feet. Thus, certain war-emergency agencies—W.P.B., P.A.W., O.P.A., created 1,300,000 cubic feet, from which only 38,000 cubic feet have been judged necessary for retention. In the "old-line" or permanent departments, such as War, Navy, or Treasury, reduction in such ratio simply cannot be anticipated.

The pressure of this flood of materials emphasized and gave impetus to a program advocated by the National Archives even before 1940, the application of sound records administration to the government's paper work. The underlying principles were given wider application as approved policy by Executive Order No. 9784, dated September 25, 1946 (*Thirteenth Annual Report*, pp. 5-7, Appen. II). This calls for active, continuing records retirement designed to dispose of useless records promptly and to bring the valuable ones into the custody of the Archives.

Up to 1940 the National Archives was engaged primarily in surveying and transferring to its building the previous century and a half's accumulation of records. The war's inroads on staff, the increased load of "must" reference work, the pressure of new accessions urged upon it by other agencies, knocked out all processing of the hoped-for character which was to be the next undertaking; no inventorying, indexing, or calendaring of detailed degree has become possible yet. However, some degree of control over holdings is being maintained immediately by means of "registration sheets," one or two pages long, describing each records group. The titles of two hundred and forty-seven such groups in custody now are given as Appendix VII of the *Thirteenth Annual Report*. Not half of these records have been listed series-by-series as is neces-

sary for prompt, economical reference service. In addition, throughout the war years, physical care of materials fell behind, and the lost ground in repair and restoration has not been regained.

There is real promise that wider acceptance of good records-management will stop the pyramiding of records and also assist in the thoughtful selection of the core of those created during 1941-45. The concomitant problem—finding a suitable place in which to preserve the core—does not bear so promising an aspect.

As of June 30, 1947, there were 813,000 cubic feet of records in the Archives building. By double-shelving and putting stacks in unequipped areas, probably 975,000 cubic feet can be accommodated. The greater portion of World War II materials have not been transferred yet, and the millions of feet of film are stored in two temporary storage buildings in near-by Maryland. As early as October, 1945, requests were included in an omnibus public buildings bill for an unpretentious eight-story records-storage building and for a suitable film building, sufficient for 100,000 reels, to be shared with the Library of Congress and other agencies (*Twelfth Annual Report*, pp. 46-47). To date, only the temporary solution for care of film has been provided. In the solution of this problem this reviewer feels that documentary film—probably pictorial material in general—must be subjected to processes of evaluation and disposal the same as any other form of record: there must be trivia or nonessential portions among those 30,000,000 feet of celluloid.

The two accompanying reports relative to the Franklin D. Roosevelt Library reflect little of significance to librarians, unless it be the advisability of seeking to tie up with a good museum or shrine. In 1945-46 there were 127,000 visitors to the building, a combination library-museum less than a football-field's distance from the Roosevelt home. In 1946-47 paid admissions numbered 304,526, in contrast to nearly "300 reference services . . . by making documents available in the search rooms or by replying to enquiries by mail." The library's admission fees are converted into a special fund in the United States Treasury, and the Archivist is empowered to expend them for equipment and other specified purposes. One other matter concerning the library which received wide public attention is dealt with in the *Eighth Annual Report* (p. 2 and Appen. II)—the availability of historical material in its custody. "Na-

tional interest, the security of the United States, standards of propriety, and special conditions imposed by donors will govern access to materials in the Library."

ROBERT W. HILL

New York Public Library

A Catalogue of the T. Edward Ross Collection of Bibles Presented to the University of Pennsylvania Library in Memory of Lucien Bonaparte Carpenter. Philadelphia: University of Pennsylvania Library, 1947. Pp. 95+3 plates.

The Bible: Manuscript and Printed Bibles from the Fourth to the Nineteenth Century: Illustrated Catalogue of an Exhibition, December 1, 1947, to April 30, 1948. Issued by the PIERPONT MORGAN LIBRARY. New York, 1947. Pp. 48+16 plates.

Although it contains a few examples of earlier versions—two manuscripts of the Latin Vulgate (of the twelfth and of the fourteenth century) and the first published Greek Testament (edited by Erasmus, 1516) are the most important of these items—the Ross Collection is primarily concerned with the English Bible. The catalog is arranged by versions.

There is space here to list only the chief treasures of the collection. The earlier works include a vellum manuscript of the Wycliffe Bible (ca. 1400), a 1534 Tyndale New Testament, and first editions of the Coverdale, Taverner's, Matthew, Geneva, Bishops', and King James Bibles, and of the Rheims New Testament. The beautifully printed Bibles in the collection include the Baskett, Baskerville, Caxton Celebration, Doves, and Nonesuch editions. There is a strong section of American Bibles: the Eliot Indian (first edition, 1663; the Petit-Brinley-J. W. Drexel-Boies Penrose II copy), the Saur, the 1782 Aitken, the 1791 Isaiah Thomas Bibles, and the New Testament of the Confederate States Bible Society (1862) are the most notable.

The collection is rounded out with a small group of prayer-books, psalters, and theological works, chiefly concerning the Bible or by its translators.

The Ross Collection is an ideal one for a library of a university. It contains a large proportion of the famous editions that every educated man should desire to see. It will make excellent

exhibition material, and its research value is obvious.

The catalog, compiled by Mr. Clifford B. Clapp, assisted by Miss Florence Wood, is interestingly and attractively arranged. The collations of the early books are sometimes given by pagination, sometimes by signatures, and sometimes by both. In regard to the Great He and Great She editions of the King James Bible, the compilers have fallen into some confusion (pp. 48-49). They call their copy of the Great He, "the first edition, first issue"; that of the Great She, "the second folio edition of Fry's first edition, second issue without reprints." The relationship between the Great He and Great She editions has been discussed in the *Library Quarterly*, XIII (1943), 256-57. According to the descriptions which the compilers have given, these Ross copies are of the first edition of the King James Version (1611), STC 2216, and (with the first title-page in facsimile and misdated) of the second edition, second issue (1613-11), STC 2224.

In these days of high printing costs, we gaze with admiration at this handsome catalog of the Bible exhibition held last winter and spring by the Pierpont Morgan Library. The beauty of the typography by Eugene B. Ettenberg, at the Gallery Press, is enhanced by the lavish use of illustrations.

The exhibition consisted of 148 books and manuscripts and 83 drawings and etchings. It began with a Babylonian clay tablet describing the Deluge (after 1714 B.C.) and with an Egyptian papyrus containing, in both the Septuagint and the Aquila versions, Gen. 1:1-5. The later fragment is of the fourth century and is the oldest known authority for the first five verses of the Bible. The exhibition contained forty-one manuscripts and ninety-six printed books, including four block books, two copies of the "Gutenberg" Bible, the 36-line Bible, the Fust and Schoeffer Bible and their psalters, and practically all the most important later European and American editions of the Scriptures down to the Isaac Collins Bible of 1791, the first complete Bible to be printed in the state of New Jersey.

Around the walls were placed 46 manuscript leaves (not later than 1260), with miniatures illustrating 283 Old Testament scenes, a drawing by Dürer of Adam and Eve, and 36 etchings by Rembrandt.

This truly was an exhibition that any booklover might yearn to see!

"The present catalogue," Dr. Curt F. Bühler states in the Preface, was "designed to explain in simple terms the salient features and relative importance of each item" of the exhibition. Dr. Bühler has succeeded admirably. He has compiled a readable catalog that conveys a maximum amount of information with a minimum number of words.

EDWIN ELIOTT WILLOUGHBY

Folger Shakespeare Library

Mss. by WAD: Being a Collection of the Writings of Dwiggin on Various Subjects, Some Critical, Some Philosophical, Some Whimsical. ("Typophile Chapbooks," Vol. XVII.) New York: Typophiles, 1947. Pp. xiv + 152. \$5.00. Distributed by the Anthoensen Press, Portland, Me.

William Addison Dwiggins has been variously described as artist, designer, typographer, calligrapher, puppeteer—rarely author. We in the graphic arts have often wished that these pertinent literary contributions of his would one day be gathered into just such a handsome volume as this. His own fine taste guided the design and typography. *Mss. by WAD* opens with that delightful bit of description, "Traverse," and exhibits its author's amazing ability to weave a pattern of words into a fantasy of rhythm, color, and sound.

One can readily see how his own capacity to cast a spell and create a mental picture by the use of words alone would lead him into a discussion on the actual merits or demerits of realistic illustration as an aid or hindrance to a just comprehension of an author's intention, how realistic illustration might even confuse the spell cast by the author's verbal fabric.

In the second and longest of the selections, "Extracts from an Investigation into the Physical Properties of Books" (1919), Dwiggins finds occasion to inquire into the wretchedly low standards of book-publishing then prevailing and exposes the shams and artificialities thought necessary. Who, publishers asked, was this crusading innovator who dared challenge the citadels of authority and established practice? One cannot refrain from applauding his adroitness in debate, logically conceding the laurels to—Dwiggin.

There follows the item, "Comment on the System of Design Known as Dynamic Sym-

metry," in which, in his inimitable manner, Dwiggins judiciously castigates those who would systematize and mechanize art.

Where can one find a more concise, lucid exposition on "The Shapes of Roman Letters" than appears in Item IV? These pages get right to the heart of the matter aesthetically and lead the unsuspecting reader into far more involved excursions in the field—to volumes such as Updike's *Printing Types: Their History, Forms, and Use*.

When Dwiggins wrote his treatise on *The Structure of a Book* (chap. v in the present compilation) back in 1927, the design of books had, generally speaking, solidified into such fridity and immobility that a major operation held out the only hope of revised thinking on the subject. Master-surgeon Dwiggins herein supplies the dissecting instruments. One need only glance at the "Fifty Books of the Year" catalogs since the advent of this discourse to appreciate the weight of his influence.

One feels that Dwiggins derives more than a little satisfaction at seeing his favorite topic, book design, reopened in "Twenty Years After" by three of the people originally interviewed in the "Investigation into the Physical Properties of Books." Their pertinent comment assumes that book design is a constantly evolving process dictated by ever varying social patterns.

In the seventh selection, "Technique for Dealing with Artists," Dwiggins undertakes with disarming philosophical insight to bridge the chasm between businessman and artist.

His "Printer's Ornament," chapter viii, written in 1920, approaches the aesthetics of ornament through its more widely understood corollary, music, whose basic qualities of rhythm, harmony, contrast, symmetry, and unified diversity find their counterpart in the decoration of a printed page.

His "Form Letters, Illustrator to Author" (Item IX) outlines the illustrator's problem in dealing with an author unconvinced of the utility of pictures in his book. Dwiggins outlines his opinions regarding the proper function of illustration and the relation between pictures and text.

Granted that a collection of this sort might easily outrun itself, still one feels a bit disappointed over the paring down given Item X, his monumental "Towards a Reform of the Paper Currency."

The concluding philosophical tracts, "Bees, Ants, Men" (1940) and "The Crew of the Ship

Earth" (1944), are remarkable for their prophetic foresight, and the latter might well be the last word on the subject.

Any book attaining the high level of this volume deserves the extraordinary care it has received during all phases of fabrication. Designed with restraint by W. A. D., the devoted coordination of its production was in the hands of Paul Bennett and the Typophiles of New York and the Anthoensen Press, of Portland, Maine.

RODNEY CHIRPE

Chicago

The Library Building. ("American Institute of Architects Building Type Reference Guide," No. 3; reprinted with permission from the *Bulletin of the American Institute of Architects*, July and September, 1947.) Chicago: American Library Association, 1947. Pp. 51.

Modular Planning for College and Small University Libraries. By DONALD E. BEAN and RALPH E. ELLSWORTH. Iowa City: Privately printed by the authors, 1948. Pp. 41+12. \$1.50. (Lithoprinted.) Order from R. E. Ellsworth, Old Dental Building, State University of Iowa, Iowa City, Iowa.

The small volume entitled *The Library Building* has been compiled "to assist the general practitioner in self-education," and this objective, according to the Preface, is to be accomplished by reporting authoritative opinions on library practices to enable the architect to participate in basic surveys and the initial planning, to anticipate trends which may not have been in the minds of his local clients, and to plan for the necessary flexibility in the library building. The chapter headings begin with a "Symposium on Library Services and Building Requirements," dealing essentially with the public library. The symposium is followed by an article by Carleton B. Joeckel, "The Public Library Building Program," reprinted from *A National Plan for Public Library Service*. There is then a very brief section dealing with libraries and book collections as living memorials, which is followed by a long series of statements by librarians and others under the general heading, "The Client Says—." Excerpts from the *Library Journal* article by Angus Snead Macdonald on "Modular Library Planning," excerpts from an address by John Paul Jones before the annual convention of the A.L.A. in San Fran-

cisco under the title, "The Architect Says—," and a page and a quarter with the general heading, "College and University Libraries," follow. The last topic deals in summary fashion with the plans of the Massachusetts Institute of Technology and the University of Iowa, and with the projected plans of the University of Pennsylvania libraries. Another article from the A.L.A. conference of 1947 is that by James M. Ketch on "Library Lighting." The last article is by Victor Gondos, "American Archival Architecture." The articles are followed by a bibliography on library planning, a directory of state library extension agencies, a list of the authors or contributors to the volume, and a directory of organizations, publications, and publishers noted in the Bibliography.

This material has appeared in the *Bulletin* of the American Institute of Architects and is republished, presumably for the sake of further convenience, by the American Library Association. While this series of articles may be of benefit to librarians, the collection is intended obviously for the benefit of architects who are not intimately conversant with contemporary problems in the design of library buildings or with the literature on that subject. One must appraise the volume, therefore, in terms of the impression that an architect would get of library building problems under these circumstances.

The reviewer believes that an architect will not get a very balanced impression of the problems of library building planning from these articles. The emphasis throughout the publication is slanted toward the public library. In the "Symposium" the lifting of quotations from context in other articles leads to a rather substantial amount of repetition and to an agglomeration of ideas that are not so carefully organized as one would wish. The disjointed effect is evident, for example, on page 6, which is selected at random. Under the subtopic of "General Planning of the Library Building," the third paragraph on this page deals with the importance of co-operation and joint planning between the librarian and the architect. The next paragraph says that "efficiency of operation is one of the three primary factors entering into the operation of any library." The next paragraph from a third author says that "a few large public library service rooms are preferable to many small rooms as each room will have to be supervised and this cost curtails real service and materials." The following paragraph begins, "For a public library the most essential element

of the library plan is to arrange on the main floor as many of the adult services as is possible."

In the next column, but on this same page, under the subtopic "Book Services," the second paragraph may be quoted as follows: "Reading rooms should be smaller and more specialized. There should be reading rooms for each of the large classifications of knowledge instead of one huge reading room." The establishment of consistency between this statement and those above may be somewhat difficult for the architect unskilled in library jargon. The quotations from librarians contain more than a little of what Randall calls "pattern language." For the architect who is facing a library problem for the first time to read the section on the desirability of functional planning which is emphasized time and time again by the writers under the topic "The Client Says—" may not really be so profitable as we librarians would like to think. The reason is, of course, that no one is very specific on what the library's functions are in terms of space or spatial relationships.

The presentations in the individually written articles are more coherent and more readily understood. Our criticism of these articles is directed not so much to their content as to the fact that they do not present a unified or coherent introductory picture of the problems of contemporary library design or operation. For example, the large amount of space devoted to the article on "American Archival Architecture" (pp. 30-35) seems somewhat excessive in view of the small number of archival buildings that will be erected in relation to the total number of public, college, and university library buildings now projected. Perhaps it is safe to say in summary that the assembly of this material in the *Bulletin* of the American Institute of Architects and its republication by the A.L.A. will be useful; this is especially true of the articles by Mr. Jones, Mr. Joeckel, and Mr. Macdonald. In order, however, to secure a more rounded picture and to interpret properly some of the quotations in this guide, the architect (as well as the librarian) should read much further. For this purpose the rather extensive bibliography on library planning will be most useful.

The second book, *Modular Planning*, is in some ways more difficult to appraise. Its purpose is primarily to benefit the unskilled librarian rather than to benefit the architect directly. Mr. Ellsworth has written a fairly extensive Introduction which is followed by a series of "gen-

eral comments" on the planning of small college and university library buildings. These remarks precede nine prototype modular plans. In presenting these "typical" plans it is the authors' thesis that librarians are confronted with so difficult a problem in describing their needs that adequate written statements are very difficult to prepare and that such statements can be usefully supplemented by some preliminary sketches of relationships and proportions of the essential parts of a library. This is undoubtedly true. However, Mr. Ellsworth and Mr. Bean have been students of library architecture for some period of time, and they recognize that they are treading on somewhat hazardous ground, for this approach is contrary to the recommendations often made by many architects and some librarians experienced in planning. The theory is that the librarian should not draw the building; he should describe his needs and allow the architect to plan the solution of his needs in terms of space and spatial relationships. The authors go to some length in explaining that they feel these rough, preliminary sketches do not violate the basic principles of having the architect rather than the librarian design the building.

Following this explanation there is a lucid statement on what is meant by "modular construction" in the contemporary meaning of the word among librarians and architects of library buildings. In this connection it would have been desirable if the authors had given much more emphasis than they did to the question of ceiling height in buildings where no separate stack structure is contemplated. The matter has a very important bearing on cost, since it affects the cubage of building.

There are nine sketches ranging from a very small building to a fairly large one, the number of modules ($22\frac{1}{2}$ feet square) on a floor ranging from nine in the smallest building to thirty-five in the largest.

While these plans may be useful to the librarian just beginning his planning, they would have been more useful had they been accompanied by more specific statements as to the needs which they would meet and rather specific tabular information about the requirements of a "typical" institution which they might fit. Not only are plans which are completely disassociated from any real situation violations of the precept of allowing the architect to plan the floor layouts; they are violations of more fundamental approaches to library building planning in which

it has been traditionally assumed, though not always carried out, that any particular library floor plan had a necessary and vital relationship with the philosophy and needs of the institution with which it was to be associated. Mr. Ellsworth has been one of those most insistent upon a statement of the educational philosophy of the institution as a prerequisite to successful planning. Such a statement cannot produce a library plan until it has been associated with a detailed analysis of the way in which the library expects to fit into such a plan and the existing and projected internal requirements of the library. This approach to planning is not demonstrated in this booklet.

To make our point more specific, it is our conviction that the authors could have made a very valuable contribution to the literature of this subject had they (1) described in some detail three or four real or imaginary institutions of higher education in relation to their curriculum, history, size and composition of student body, size and nature of faculty, areas of research interest, campus plan, predicted growth, etc., and (2) described the associated libraries, giving such information as size of collection, rate of growth, nature of the collections, amount and character of use, size and distribution of staff, book budget, nature of the present library, etc.

An orderly presentation of this type would have given the library planner the kind of information required in a good program. If the authors had then proceeded to show how the areas and interrelationships of the library might be developed to fit these conditions—even approximately—the path toward successful planning might have been clearer than it is from plans that are divorced from any specific frame of reference.

HERMAN H. FUSSLER

University of Chicago Library

The Folger Shakespeare Memorial Library: A Brief Account. Washington, D.C.: Folger Shakespeare Library, 1948. Pp. 20. \$0.50.

This small but interesting pamphlet seems to have been prepared to satisfy the demands of tourists who want to take home with them some tangible record of their stop at the impressive mausoleum that holds seventy-nine copies of the First Folio. It seems likely to serve this function quite adequately, and the plan of the collection and the theory of its use are well de-

fended against the attacks of the traditional tourist who asks unenlightened questions about the contents and the purpose of the library. One could wish that the pamphlet could have been doubled in size, in order to make possible at least a brief survey for scholars of the library's present holdings. Such an added usefulness would not have harmed the tourist who wanted only a souvenir.

The Folger Library has always been a little like a funeral monument to Shakespeare. Mr. Folger himself thought of his collection in that way, for he sent each new purchase directly to his warehouse instead of showing it to his friends or reading it himself. The building in Washington, handsome though it is, seems more tomblike than bibliothecal. The reading-room for scholars, in which the balding scholars are completely at the mercy of the immense chandeliers and the bust of Shakespeare, is proclaimed as "a typical great hall of an English house or college . . . modified to suit its function." The collection includes not only seventy-nine First Folios but twelve hundred editions or issues printed in the nineteenth century, of which a few help in the understanding of Shakespeare but most are only unneeded witnesses to his widespread fame. So the pamphlet begins by asserting that the library is "a fitting monument to William Shakespeare" and "a monument, too, to Henry Clay Folger and Emily Clara Folger."

But if the library during its first fifteen years has seemed to be principally a monument, this pamphlet properly points out that it aspires to be more than a monument. It has been searching for its proper function as a special library, and now that its formative period is over, it stands ready under its newly appointed director to develop as a center for and a stimulus to Elizabethan scholarship in the New World.

ALLEN T. HAZEN

*School of Library Service
Columbia University*

Teaching through the Elementary School Library. By MARGARET KESSLER WALRAVEN and ALFRED L. HALL-QUEST. New York: H. W. Wilson Co., 1948. Pp. 183. \$3.00.

The authors state in the Preface, "*Teaching through the Elementary School Library* is not a discussion of library science. . . . This volume

is for the classroom teacher and is intended to help her teach with books and varied materials and to guide her pupils in a satisfying use of the library and its collections." They say further: "School administrators will also find it helpful."

As the book is examined with these statements in mind, it becomes apparent that, contrary to the first part of the quotation above, the work is to a considerable extent a discussion of what library science is to many. With the exceptions of chapters vii and ix, very similar discussions can be found in Fargo's *Library in the School*, for instance, under either main headings or subheadings. This is true also for several of the topics in such books as Gardiner and Baisen's *Administering Library Service in the Elementary School* and Power's *Library Service for Children*. Common to all the titles mentioned are discussions of the subjects represented by the chapter headings "Comprehensive Reading Guidance," "Stimulating Reading," "Selecting Books for Children To Grow On," "Magazines for Boys and Girls." Furthermore, chapters vii and ix, dealing with "The Card Catalog as a Short Cut for Finding Material" and "Teaching Care and Ownership of Books," respectively, and the sections on the use of dictionaries, encyclopedias, and other factual books resemble closely the discussions of these subjects in standard titles on teaching the use of books and libraries. One question, therefore, what definition of the term "library science" the authors accepted. Consideration of technical and administrative organization is generally omitted, although a hint of this is discernible in the early pages of chapter vii, dealing with the card catalog and other miscellaneous topics.

The volume is composed of eleven chapters, each of which, with the exceptions of chapters iii and iv, is followed by a bibliography and a list of study activities. These are followed in each case only by a list of study activities. The Table of Contents cannot be relied upon entirely for direction to these latter features.

As indicated in the Preface, *Teaching through the Elementary School Library* is intended to serve as a text for use in college and university classes which stress library use with children, as well as an aid to the classroom teacher in teaching with books and other materials and in guiding children in the use of the library and its collections. With respect to these purposes as stated, it may be said that the book realizes them to some degree. The extent to which it is

successful would seem uncertain. To an inexperienced instructor who might attempt to train a class in how to teach through the elementary-school library with this text as a guide or to the inexperienced classroom teacher who uses it, the book might possibly seem adequate. Conversely, to one who has been an elementary-school librarian as well as a teacher, the work would not seem a desirable guide to choose for the intended purposes—the main reason being that there are better sources available.

To this reviewer the book seems uneven in composition and substance. In places the writing exhibits a lack of linguistic facility which tends to obfuscate meanings of statements. The plan of each chapter seems indistinct, and the discussions are likely to become submerged in loose verbalism. A skewed emphasis is observed in some chapters, as in the one of slightly over nineteen pages entitled "Magazines for Boys and Girls," of which more than seven pages are devoted to consideration of comic magazines. Similarly, the chapter "Audio-Visual Aids to Teaching," is concerned with motion-picture films through slightly more than eleven of its eighteen pages of text.

Throughout the volume there are numerous instances of careless editing. More disturbing, however, are the flat statements appearing rather frequently which are either contrary to fact or which carry questionable implications. An example is the assertion (p. 34) that "the price \$3.50 or \$3.75 for a volume of biography, for instance, shows immediately that the book is for adults." A check with the biography section of the latest edition of the *Children's Catalog* establishes the falsity of this statement thrice over before the *L's* are finished.

Chapter ii entitled "Stimulating Reading," is possibly the best of the eleven. To one who was an elementary-school librarian for three years, the descriptions of children's reading tastes and of methods and procedures used in creating and directing interests ring true. Chapters iii and iv, both of which explore the general topic "Selecting Books for Children To Grow On," are probably the most uneven ones in the volume. The discussions herein seem to comprise a peculiar combination of the acceptable, the disappointing and untrustworthy, the questionable, and the puzzling.

Although this is a first attempt to assemble in one volume the information required to fulfill the purposes indicated in the title and in the Preface—which would seem to be a step in the

right direction—certainly the really “good” work of this kind is yet to appear.

MARION GRADY

*Ball State Teachers College
Muncie, Indiana*

The Library in the School. By LUCILE F. FARGO.
4th ed. Chicago: American Library Association, 1947. Pp. 405. \$4.00.

This latest edition of Miss Fargo's standard work is “completely revised and re-written” and, according to the Foreword, presents the school library as a communications center, using both printed and audiovisual materials. It is “a mature and well-established agency no longer arguing for its place in the educational program or of questionable status in the library world, but accepted on both sides as indispensable.” Furthermore, the re-writing has resulted in “changes in tone, emphasis, and coverage.” Emphasis on the library at the secondary-school level continues, however; and, as in each of the previous editions, the author explains that the text is *not* a manual of technical processes but a discussion of their application to school situations.

The organization of the subject matter remains constant, the text being divided into the same six parts, although the titles of some chapters have been changed, one has been omitted, and one divided into two. The book has been shortened by 147 pages, but the arrangement and presentation within chapters has been little changed. A chapter outline is given first, followed by text broken into major divisions with headings and into subdivisions by subheadings. Footnotes are retained, as well as bibliographies at the end of chapters, but the questions and problems carried in previous editions have been dropped. Actually, the book differs more from the third edition (1939) than the second (1933) does from the first (1930) or the third from the second.

In this newest edition more abstracts of other books and studies have been incorporated in the text, as, for example, in the chapter on “The Library as a Reading Center,” which discusses reading as presented in Terman and Lima's *Children's Reading*. The incorporation of the gist of other publications makes the text more useful in schools having a small professional collection with few duplicates, and for the beginner

it furnishes a reasonable introduction to the problem. Because of the incorporation of new references and new data and standards, the book will be needed for reference by experienced librarians and will replace the third edition.

The presentation continues to be almost encyclopedic in spots, making for less easy continuous reading, although it may improve the reference value of the book. Reading certain chapters, such as those on “Housing and Equipment” and “Technical and Mechanical Processes,” gives one the feeling of re-reading or reading in circles.

The author continues to present various points of view and seldom takes sides with any force of argument. Perhaps the Preface to the first edition explains this: “We are still unable to be sure in all cases what is good practice and what is not. We have been too busy getting things done to take time for patient investigation under controlled conditions. The role of the textbook author is that of the reporter.”

Of the seven titles in the original “Library Curriculum Studies” (the series note is dropped with this edition of Fargo), only two others were ever issued in more than two editions. Surely no other test is as useful as this one to the many prospective school librarians and teacher-librarians who study the problems of the school library.

ESTHER STALLMAN

*New York State College for Teachers
Albany*

A Guide to Trollope: An Index to the Characters and Places, and Digests of the Plots, in All of Trollope's Works. By WINIFRED GREGORY GEROULD and JAMES THAYER GEROULD. Princeton: Princeton University Press, 1948. Pp. xxv + 256. \$5.00.

A Guide to Trollope is a guide indeed, in the sense that it will aid any devotee of Trollope to orient himself instantly with respect to the plot, characters, and geography of any Trollope novel. It is not a guide, however—and the title may be somewhat misleading on this point—for outsiders who hope to find in Mr. and Mrs. Gerould's book a kind of Royal Road to Trollope. The *Guide*, in other words, will be most useful only for those travelers who have been here before. It is a concordance that must have been a genuine labor of love, for it lists every character, every place name, every house in the entire

Trollope canon and obligingly supplies terse summaries of the plots of all the novels. Where Trollope has himself described or commented on a person or place, his words are quoted. Outstanding features of a novel are mentioned; for example, at the end of the entry for *Castle Richmond* we read: "Throughout the book there are moving descriptions of the famine of 1846-47" (p. 46). A character who appears in more than one work is fully cross-referenced.

Technically, then, *A Guide to Trollope* is the excellent book that might have been expected from two such eminent bibliographers as Mr. and Mrs. Gerould. But the nagging thought remains—whom will this book serve? It is clearly not a work for the neophyte—the reader who is only beginning to savor the sober delights of Trollope. Nor is its utility for the connoisseur of Trollope unmistakable. The habitué of Barsestshire is not likely to consult the *Guide*; he delights in being his own guide, and if, by chance, he is planning to write a book on Trollope, he will be the more determined to verify his own references. That the Geroulds' *Guide* will at some time spare a harried student some effort is altogether probable, but it is a work that, admirable as it is, will be restricted to an extremely limited audience. For Shakespeare and the Bible demand their concordances. We quote them both far more frequently than we read them, and we are right to wish to find our way rapidly through those enormous texts. But Anthony Trollope (*pace* the Trollopians) does not belong to that august company, as *A Guide to Trollope* involuntarily demonstrates.

MILTON CRANE

University of Chicago

Cumulative Catalog of Library of Congress Printed Cards. Issued by the LIBRARY OF CONGRESS. 9 monthly issues, 3 quarterly cumulations, annual cumulation. \$100 per year.

The present *Cumulative Catalog*, the first issue of which appeared in January, 1947, had the immediate impulse for its inception in the demand for a current continuation of the *Catalog of Books Represented by Library of Congress Printed Cards* (reproducing cards printed through July, 1942) and its *Supplement* (in progress since May, 1948, to include cards printed from August, 1942, through December, 1947), published by Edwards Brothers of Ann Arbor and sponsored by the Association of Research

Libraries.¹ It is compiled and edited by the Catalog Maintenance Division and distributed by the Card Division. It reproduces in alphabetic order in reduced facsimile the cards currently printed by the Library of Congress, including the cards prepared by other libraries participating in the co-operative cataloging program. In conjunction with an L.C. card depository catalog or with the Edwards Brothers book catalogs, the *Cumulative Catalog* is, in the words of the Librarian of Congress, "the most comprehensive library catalog in the world which is presently available to libraries or individuals in a constantly up-to-date arrangement."²

The *Cumulative Catalog* is an important step in the development of the centralized cataloging program of the national library. It makes available at a moderate cost to a far larger number of libraries in this country and abroad the advantages and resources for acquisitions work, cataloging, classification, bibliographical and reference services, and interlibrary loan formerly provided by an L.C. depository catalog, which only one hundred libraries possessed. With this new tool, libraries are equipped to give a higher quality of service to their patrons than they could previously give. With the inauguration of the *Cumulative Catalog*, the system of free depository L.C. card catalogs was ended (though libraries might continue their card catalogs on a subscription basis). The new catalog is planned to be a self-sustaining project, and it will effect needed economies at the Library of Congress, on which the system of providing free depository catalogs was a growing financial burden. Libraries formerly receiving the card or proof sheet catalogs by deposit or subscription are also relieved of the expense of maintaining them and of filing the approximately 60,000 new cards each year.

The issuing of the catalog in book form makes it necessary for the user to consult several alphabets to find a given title; but, even though the type is small, the catalog is probably more con-

¹ Credit for the original proposal is due to Mr. H. W. Wilson. Cf. Preface (signed: Luther H. Evans) in the *Supplement to A Catalog of Books Represented by Library of Congress Printed Cards*, Vol. I: 1948 (Ann Arbor, Mich: Edwards Bros., 1942-46); and H. W. Wilson's pamphlet, *A Proposed Plan for Printing Library of Congress Cards in Cumulative Book Form* (New York: H. W. Wilson Co., 1946).

² Letter accompanying the review copy of the first issue of the *Cumulative Catalog*, January, 1947.

venient to consult than a card catalog would be. The cumulative feature in part offsets the usual disadvantage of a book catalog, wherein free intercalation of new and old titles is impossible. This is clearly a greater disadvantage in the L.C. catalog than in a trade catalog; for, while in the latter the inclusion of a title in a given alphabet is strictly determined by a generally known factor, the date of publication, in the *Cumulative Catalog* the inclusion of a title in one issue rather than in another is contingent upon a factor which the user has no way of knowing—the date when the book was cataloged and the cards were printed at the Library of Congress. This situation, as well as considerations of economy, perhaps prompted the decision to include in the monthly issues only cards for books issued during the current year and the previous two years, the quarterly and annual cumulations alone including all cards printed regardless of publication date.³ This is a far from satisfactory solution, for the chances of finding an entry for a 1720 English imprint or for an early nineteenth-century Italian periodical in the current quarterly or annual cumulations are so slight that it is perhaps ridiculous to consult them. It might well be more useful to isolate the cards for older imprints and reproduce them in a new three- or five-year supplement to the Edwards Brothers *Catalog*.⁴

Revised cards present a similar problem in being difficult to locate. They are regarded as new cards and are included in all issues on the

³ The original plan was to include cards for books published prior to 1939 in the annual cumulation only. Cf. Introduction to the first monthly issue and the revised Introduction in the January, 1948, issue. The reasons for this change in plan are not explained.

⁴ Five-year and perhaps more comprehensive cumulations of the *Cumulative Catalog* are contemplated. No annual cumulation covering 1947 is to be published, since the cards for that year are to be included in the Edwards Brothers *Supplement*. This decision was made in the interest of uniformity of entry in the future cumulations, since the cards printed during 1947 would not reflect the typographic changes adopted January 1, 1948, or (for the first half of 1947) the effects of the new descriptive cataloging code, adopted tentatively in July, 1947. The first annual cumulation will accordingly appear in January, 1948 (cf. Preface in the *Supplement to A Catalog of Books Represented by Library of Congress Printed Cards* [1948], and the revised Introduction to the *Cumulative Catalog* [January, 1948]).

same basis as new cards. Although this means that revised cards are promptly available as printed, they are lost among the new titles, and revised cards involving the same entry are often scattered through several issues. Theoretically, the only way a cataloger can be sure that a main or added entry used on an L.C. card is still in accepted form is to consult all subsequent issues of the *Cumulative Catalog* to make sure that no revised card has been issued and that no reference has later been made from the entry. This would, of course, not be undertaken unless the cataloger has reason to question the form of entry. Subscription for the revised cards separately provides a partial but expensive solution for this difficulty.

A very commendable feature of the new catalog is the inclusion of added entries for editors, translators, sponsoring bodies, etc., and of title entries for works published anonymously and for certain collections and serial publications. These are set up especially for the *Cumulative Catalog* and are in the form of partial entries with reference to the main entries, similar to the added entries in the British Museum *Catalogue*. This means that cards are much easier to find in the new catalog than in a depository catalog, which contains only main entries and a limited number of cross-references from variant forms of names, etc. Cross-references from pseudonyms and variant forms of personal and corporate names are included as printed. The added entries and cross-references usually make it possible to locate the card even with such partial data as is often supplied by a patron seeking the book, or by a footnote reference or a listing in a dealer's catalog. Clerical assistants in catalog and order departments are able to locate most of the entries with little difficulty. In the matter of cross-references, however, it must be noted that each issue is not and could hardly be made self-sufficient but must be used in conjunction with the entire series of previously issued cards or catalogs. A cross-reference card is printed only once for the Library of Congress, and so appears only once in the depository-cumulative catalog. An exception is apparently made in the case of pseudonym cross-references, which are now reprinted in each issue which lists a work published under the pseudonym.⁵ A cross-refer-

⁵ They were not reprinted in the earlier issues. A fuller introduction announcing such changes in inclusion and providing more detailed information concerning the plan and use of the *Cumulative Catalog* would be very helpful.

ence from a variant form of name of a corporate body or from the part of a compound name not used as entry will be found in the current issues of the catalog only if the entry had not previously been established in the L.C. catalog. The difficulty of finding current entries for corporate bodies, anonymous classics, medieval and oriental names, etc., will increase as the number of alphabets increases, for there will be no way of knowing in what issue of the catalog the necessary references will be found.

From the point of view of the libraries using the catalog and purchasing L.C. cards, the problems presented by variant forms of entry and by revision of entries could perhaps best be solved by the publication of standard authority lists for all personal name, anonymous classic, and corporate entries requiring other than obvious cross-references. Such authority lists could be similar to the L.C. *List of Subject Headings* in being currently cumulative and in tracing necessary *see* and *see also* references under the entries adopted, as well as printing them in alphabetic order with the headings used. Informational notes and authorities might be included as needed, as on history cards for corporate bodies. Such authority lists would result in very large savings in catalog departments throughout the country, which, with nothing to guide them except the entries printed on the L.C. cards, must often repeat the work of searching the entry which has already been done at the Library of Congress, in order to find out how the heading is to be used and what references are required. They would also assure greater uniformity of entry in library catalogs throughout the country and would facilitate the supplying and revision of copy for cards prepared in the co-operative cataloging program. The new *Cumulative Catalog* only points up the need for compiling such authority lists as the next project in the development of genuine centralized cataloging.⁶

The most important limitation on the useful-

⁶ The University of Chicago Library is building up in its official catalog a partial authority file of current new L.C. entries through the use of the proof sheets for cross-references, which may be ordered separately. Since references to a new heading are normally grouped together on the proof sheets, they may be traced on an authority slip before they are clipped and filed. This is proving very useful, but it is a costly undertaking for a single library. A centralized cumulative authority file service would accomplish better results for all libraries at once.

ness of the *Cumulative Catalog* is that the coverage is not sufficiently comprehensive. The sins of omission beset the national library in its valiant effort to maintain bibliographic control over the flood of currently printed materials as well as to make available its uncataloged arrears and its present acquisitions of older publications. We are far from the mark in centralized or co-operative cataloging so long as large research and specialized libraries must still prepare their own cards for over half the books cataloged each year. The waste in effort and expense involved in cataloging the same title a hundred or even a dozen times over is stupendous. That the need is recognized for expanding the *Cumulative Catalog* to include a larger proportion of the titles available in American libraries is apparent from a recent communication from Dr. Wagman, director of the Processing Department, Library of Congress. The suggestion has been made that the catalog include the cards produced currently by other libraries and sent to the Union Catalog at the Library of Congress. Such an expansion would probably double the size of the catalog at least, and so make it less easy to use. Cards from the Union Catalog would be worth reproducing only if they were accurate and in standard form and if they included the tracing of added entries and subject headings as used by L.C. and gave classification numbers. A mere entry in other than standard catalog form can be found as well in trade catalogs. A minimum of editing of the cards, such as is performed by L.C. in the co-operative cataloging project, is essential if the entries are not to conflict and if the catalog is to form a coherent whole. The proposed expansion would probably double the cost of the catalog. It may well be asked whether an equivalent financial contribution on the part of subscribing libraries to a project for expanding co-operative and centralized cataloging would not prove more profitable.

In spite of the limitations of its coverage and in spite of the specific difficulties in use which have been mentioned above, the new *Cumulative Catalog* is proving to be an invaluable tool; and its potentialities in facilitating the procedures carried on in all libraries and in improving library services are probably only beginning to be recognized. Aside from its obvious usefulness in the ordering of L.C. cards by card number and in acquisition, cataloging, and classification, the catalog is proving of great value in book selection, reference, interlibrary loan, and bibliog-

raphy, providing, as it does, not only the essential information concerning the author, title, edition, editors, sponsoring bodies, imprint, collation, and series, but also useful descriptive notes and information concerning the subject matter through contents notes, subject headings, and classification numbers according to the L.C. and Decimal systems. The *Cumulative Catalog*, it is promised in its Introduction, "will be responsive to the needs and suggestions of the libraries supporting it, and a continuing effort will be made to cultivate its potentialities and usefulness within the limits of the support accorded it by these libraries." So important a venture in cataloging and bibliography demands the best constructive criticism from librarians throughout the country if it is to be molded to their needs and if its potentialities are to be realized.

MAY G. HARDY

University of Chicago Library

Author Headings for the Official Publications of the State of Alabama. By ANNE ETHELYN MARKLEY. Chicago: American Library Association, 1948. Pp. xviii + 123. \$4.75.

Librarians have long been aware of the increased importance of American state publications for purposes of study and research. This wider use is due principally to a greater emphasis on primary source materials but is attributable also to the enriched content of the publications which has made them of increasing value to students and research workers, particularly in the social sciences.

Bibliographical apparatus, unfortunately, has not kept pace with the need to make state documents accessible. Checklists and indexes are few and unsatisfactory. Librarians have found their acquisition activities hampered by lack of information as to what has been published by the states; reference workers have been unaware of hidden materials in the files of state publications. Under these conditions the library catalog assumes new importance as the only means of making state documents accessible, but the lack of a comprehensive and reliable index of state agencies has made the work of the cataloger long and arduous.

Author Headings for the Official Publications of the State of Alabama is the first of a series of publications designed to supply catalogers with the ready reference tools that will enable them to follow with assurance the A.L.A. catalog rule

for the entry of government publications. The purpose of the series is to furnish for each of the forty-eight states a separately published list of the legally adopted names of its departments, bureaus, and other agencies, to be used as the author entries of its official publications. The Alabama list is the first concrete accomplishment of a project initiated nine years ago by the A.L.A. Division of Cataloging and Classification, through its Special Committee on State Author Headings. As the first published list, it contains a general introduction to the series, indicating the scope of the proposed lists and the work of the special committee in making the series program a reality.

The Alabama list, originally prepared by Miss Markley as a Master's thesis at the University of Illinois Library School in 1944, covers the official agencies of Alabama from December 10, 1817, the date that territorial government became effective, through July 2, 1943, the date of the last regular legislature in 1943. Agencies that do not come within the official group, or fall so near the outer limits of this group that their inclusion seemed of doubtful value, are omitted.

The name of each agency is presented in the form specified in the body of the law, in the act authorizing the agency, or as it is used in subsequent laws or other sources referring to it. Library of Congress headings are used unless they differ from the names as designated in the law. At times it was necessary to devise a name from the statement of duties in the act, abridged or condensed to suit the uses of the catalog. Headings appear in the list exactly as they would be used on the catalog card, with the name of the state at the beginning of each heading. The headings are given in the direct form, in a single alphabetical arrangement with the cross-references.

Comment should be made on the generous number of cross-references. These anticipate every possible need for direction from a variant form, including changes of name, significant words, and even functional and subject approach by referring from "Education," "Agriculture," etc., to the specific agencies dealing with these subjects. See also references connect the names of related agencies. A helpful typographical distinction is made by the use of capital letters for the author headings and lower-case letters for the cross-references.

Following each author entry in the list are "Authorities"—citation of the act or order in

which the agency first appears in the law and of the title and section in which it is entered in the 1940 code, if the office is still in existence, and to later laws if changes occurred between 1940 and 1943. Sources of names other than the law are also cited.

Especially valuable in tracing the continuity of an agency is the historical paragraph, "a chronological record of name changes, transfer of duties if such transfer affects the designation of a department or division; mergers with other offices or abolition of the agency, with reference to laws authorizing each change." Some agencies have lived a quiet life and have no history to be recorded. Others show such complicated relationships as that of the ALABAMA BOARD OF INSPECTORS OF CONVICTS, which was abolished three times and dissolved once, reappearing under as many as four different names between the years 1841 and 1919, when the third abolishment took effect and the duties were assigned to the State Board of Control and Economy (later State Board of Administration)! When consolidations and reorganizations were too complicated to be given in a single note each agency is entered separately with connecting cross-references.

The two supplements, *A Guide for Compilers of State Author Headings Lists and Suggested Method of Procedure*, are reminders that the present work is one of a series for which standards had been set up by the Special Committee on State Author Headings. These standards assured uniformity in the lists and their maximum contribution to co-operative cataloging.

In her Preface to the series Miss Markley has stated that these lists are designed "to reduce the time and labor generally spent searching for the legal name of an agency. . . ." It is abundantly clear to the reviewer that the part of this objective that belongs to a particular state has been accomplished by the Alabama list. Users of Alabama documents will find that their road has been charted and directions posted.

Furthermore, the Alabama list is the forerunner of a long line of other state lists, nine of which have already been completed. It is hoped that the enthusiastic reception and immediate usefulness of the precursor of the series will bring about the prompt appearance in print of the succeeding lists.

CLYDE E. PETTUS

Emory University Library School
Emory University, Georgia

Yliopiston Kirjasto, 1935/1936—1945/1946.
Helsinki, 1936-46. 11 numbers.

The annual reports of Dr. Lauri O. Th. Tudeer, director of the University and National Library of Helsinki, present a clear picture of the library's over-all service program and its position in the library world today. Each report contains sixteen pages, on the average, and is written in Finnish. Each covers a fiscal year from June through May. An excellent short history of the library before this period can be found in an article by Dr. Tudeer in *Le Nord*.¹

The general statement (including the financial section) covers library policy, over-all service, important acquisitions, and the financial statement. Dr. Tudeer explains in detail the various handicaps to library service during the war years. Books had to be packed and moved to places of safekeeping. The library building had to be sandbagged, blackout regulations had to be followed, and heat restrictions curbed use of the library. Above all, the library lost most of its personnel to the army and to other government and defense services. All these factors tended to reduce service to the point at which the library was entirely closed for a time.

The collections sustained one major loss directly attributable to enemy action, and that was the result of an aerial bombing. However, after the war, when books were being returned to the shelves, some ten thousand volumes stored in the basement of a near-by church were found to be damaged by water. Later, through closer examination, it was found that nearly two thousand of the volumes could be considered a total loss.

As early as 1937, mention was made of an addition to the library building. At that time several architect's plans were considered, and the best was selected. This building reappeared as a serious consideration until 1941, when the project was indefinitely postponed on account of finances. It is interesting to note, however, that the 1946-47 annual report of the University of Turku Library describes a project now building.²

In the fiscal year 1935-36 the general appropriation was approximately \$45,000. Appropriations reached an all-time peak of \$53,000 for

¹ Lauri O. Th. Tudeer, "La Bibliothèque de l'Université de Helsinki," *Le Nord, revue internationale des pays du nord*, VII (1944), 219-20.

² *Turun Yliopiston Kirjasto, 1946-47* (Turku, n.d.).

the fiscal year 1937-38. During the war years, the appropriation went down to \$42,000. By 1945-46, the appropriation had reached a new all-time high of \$56,000, when all library services had been restored to normal. These amounts are based on an average of 0.021 United States cents per Finnish mark.

The section on readers' service gives a very good tabulation of the record of that division. Tables show home loans, reading-room use, national and international interlibrary loans, and sex and occupational status of borrowers; and each table shows percentage of increase or decrease over the previous year. Before the war, circulation had steadily increased to 97,000 volumes during 1935-36 and dropped to a low of 27,000 volumes during 1941-42. By far the greatest number of users were, of course, students; and the general public, the university instructors, and government personnel followed in order. In every instance history was the field in which most books were borrowed, and literature ran second, with education and philosophy usually third. National interlibrary loans never ran over 2,000 volumes, and international interlibrary loans never over 200.

The Kotimainen Painotuoteosasto (National Imprints Division) originated in the law that established the library as a depository for two copies of each printed item produced by any press in the land. Detailed lists of individual and corporate donors are given. The chief work of the division is technical processes rather than public service.

All gifts and exchanges of foreign newspapers, magazines, bulletins, library reports, and other corporate publications go to the Ulkomainen Painotuoteosasto (Foreign Imprints Division). Here, too, the greater part of the section is taken up by the listing of individual and corporate

donors. The Danish, Swedish, and Norwegian libraries have done much to aid the library in keeping its scientific collection up to date during the lean years.

The Slavic Division, formerly the Russian Division, lost much of its importance when Finland became independent and the legal deposit of Russian books came to an end. Finnish appropriations for acquisition of Russian books never has matched the acquisitions from legal deposit prior to 1917. During the war all acquisition of Russian books ended. However, some material from other Slavic countries continued to come in, and in 1940 the division's name was changed to its present form.

As the result of both gift and purchase, the Käsikirjoituskokoelma (Manuscript Division) holds virtually complete collections of manuscripts of many of Finland's great writers. Another important part of the work of the division is processing of maps and microfilming. It should be remembered that the Manuscript Division has never fully recovered from the blow it sustained when it lost all its historic manuscripts in the 1827 fire in Turku, seat of the library at that time.

The last section of the reports, covering the staff, deals with promotions, new additions, vacations, deaths, and sick leaves. Up until 1918, the library operated with a staff of seven members, and in that year seven new employees were authorized. The 1945-46 report listed 39 different names as staff members, including the director, division heads, first and second assistants, and apprentices.

TAISTO JOHN NIEMI

*Western Michigan College Library
Kalamazoo*

BOOKS RECEIVED

- Alice Meynell Centenary Tribute.* Edited by TERENCE L. CONNOLLY. Boston: Bruce Humphries, 1948. Pp. 72. \$2.25.
- American Literature in the College Curriculum.* Issued by the COMMITTEE ON THE COLLEGE STUDY OF AMERICAN LITERATURE AND CULTURE, NATIONAL COUNCIL OF TEACHERS OF ENGLISH; WILLIAM G. CRANE, chairman. Chicago: National Council of Teachers of English, 1948. Pp. v+55. \$0.90.
- "Books for Catholic Colleges: A Supplement to Shaw's List of Books for College Libraries." Compiled for the CATHOLIC LIBRARY ASSOCIATION by SISTER MELANIA GRACE and GILBERT C. PETERSON. Chicago: American Library Association, 1948. Pp. 134. \$3.75. (Planographed.)
- "Business Biographies and Company Histories: A Preliminary Edition." ("Baker Library Reference Lists," No. 4.) Cambridge, Mass.: Baker Library, Graduate School of Business Administration, Harvard University, August, 1948. Pp. 54. (Lithoprinted.)
- Cataloguing: A Textbook for Use in Libraries.* By HENRY A. SHARP. With an Introduction by L. STANLEY JAST. 4th ed. London: Grafton & Co., 1948. 255.
- Centennial of the Oregon Territory Exhibition, September 11, 1948—January 11, 1949.* Issued by the LIBRARY OF CONGRESS. Washington: Government Printing Office, 1948. Pp. 76. \$0.65.
- The Chicago Conference: A Meeting of the Co-operative Committee on Library Building Plans Held at the International House of the University of Chicago, January 27, 28, 1948.* Edited by LOUIS KAPLAN. Madison, Wisconsin, 1948. Pp. 33.
- A Descriptive Guide to the Libraries of the University of Leeds.* ("Library Publications," No. 1.) Leeds: Brotherton Library, 1947. Pp. 134. 6s. 6d.
- Dr. Williams and His Library.* By STEPHEN KAY JONES. Cambridge: W. Heffer & Sons, 1948. Pp. 35. 2s. Order from Friends of Dr. Williams' Library, 14 Gordon Square, London, W.C. 1.
- Education for Professional Responsibility: A Report of the Proceedings of the Inter-professions Conference on Education for Professional Responsibility Held at Buck Hill Falls, Pennsylvania, April 12, 13, and 14, 1948.* Pittsburgh: Carnegie Institute of Technology, 1948. Pp. 207.
- An Exhibition Commemorating the Settlement of Georgia, 1733-1948.* Issued by the LIBRARY OF CONGRESS. Washington: Government Printing Office, 1948. Pp. 92. \$0.65.
- "Exploring the Possibilities of Centralized and Co-operative Services for Diocesan School Libraries: Papers Presented before the School Libraries Institute at the University of Portland, July 7, 9, 1948." Portland, Ore.; University of Portland, 1948. Pp. 65. \$1.50. (Mimeographed.)
- Fundamentals of Practical Cataloguing.* By MARGARET S. TAYLOR. ("Practical Library Handbooks," No. VIII.) London: Allen & Unwin, 1948. Pp. 114. 8s. 6d.
- Handbook of Latin American Studies, 1945 (No. 11).* Edited by MIRON BURGIN for the LIBRARY OF CONGRESS. Cambridge, Mass.: Harvard University Press, 1948. Pp. 405. \$7.00.
- The Librarian and the Teacher in General Education.* By B. LAMAR JOHNSON, ELOISE LINDSTROM, and OTHERS. Chicago: American Library Association, 1948. Pp. xi+69. \$2.00.
- Libraries and the Materials of Local History.* By JOHN L. HOBBS. London: Grafton & Co., 1948. Pp. 224. 12s. 6d.
- Libraries in Australia.* By NORMAN LYNRAVN. ("Quest Books.") Melbourne and London: Cheshire Pty, 1948. Pp. 58. 3s. 6d.
- "Limitation of Debate in the United States Senate." By GEORGE B. GALLOWAY. ("Public Affairs Bulletins," No. 64.) Washington: Library of Congress, Legislative Reference Service, October, 1948. Pp. 30. \$0.25. (Lithoprinted.)
- Livre et document: Études sur le livre, les bibliothèques et la documentation* ("Éditions de la Revue du livre et des bibliothèques.") Edited by GEORGETTE DE GROLIER. Saint-Cloud, 1948. Pp. 94. For further information write Mme De Grolier, directrice de la Revue du livre, 222 Boul. Saint-Germain, Paris-VIème, France.
- Matching Needs and Facilities in Higher Education: A Report to the Temporary Commission on the Need for a State University.* ("Legislative Documents [1948]," No. 31.) By FLOYD W. REEVES, ALGO D. HENDERSON, and PHILIP A. COWEN. Albany: State of New York, 1948. Pp. 126.
- "Materials for the Study of Federal Government." By DOROTHY C. TOMPKINS. Chicago: Public Administration Service, 1313 East Sixtieth Street, 1948. Pp. 338. \$5.00.
- Newspaper Microfilming Project Catalogue, 1948.* Issued by the CANADIAN LIBRARY ASSOCIATION. Ottawa: Canadian Library Association, 1948. Pp. 28. \$0.50.
- Nursing for the Future: A Report Prepared for the National Nursing Council.* By ESTHER LUCILE BROWN. New York: Russell Sage Foundation, 1948. Pp. 198. \$2.00.
- On the Meaning of Music.* By GLEN HAYDON. (Publication of "Louis Charles Elson Memorial Fund.")

Washington: Library of Congress, 1948. Pp. 26. Gratis.

Proceedings of the Twenty-third Meeting Held at Indore, December, 1946, Vol. XXIII. Queensway, New Delhi: Indian Historical Records Commission, National Archives of India, 1947. Pp. 47.

"Reference Notes on the Press in European Countries Participating in the European Recovery Program." Prepared by the EUROPEAN AFFAIRS DIVISION, LIBRARY OF CONGRESS. Washington: Library of Congress, 1948. Pp. 39. \$0.25. (Planographed.)

"Report on the Workshop for College and University Librarians Held at the University of North Carolina, July 26-30, 1948." Edited by AGATHA BOYD ADAMS. Chapel Hill: School of Library Science, University of North Carolina, 1948. Pp. 46. (Mimeographed.)

School Libraries: Criteria for Service, Personnel, Rooms, Budget, and Book Selection. By RHETA A. CLARK. Hartford, Conn.: Bureau of Libraries, Connecticut State Department of Education, June, 1948. Pp. 40.

"Textbooks: Their Examination and Improvement: A Report on International and National Planning and Studies." Prepared by the EUROPEAN AFFAIRS DIVISION, LIBRARY OF CONGRESS. Washington: Library of Congress, 1948. Pp. 155. \$1.05. (Planographed.)

Wartime College Training Programs of the Armed Services. By HENRY C. HERGE, SIDNEY L. PRESSEY, HAROLD SPROUT, GORDON K. CHALMERS, RAYMOND J. CONNOLLY, and EDWARD C. ELLIOTT for the COMMISSION ON IMPLICATIONS OF ARMED SERVICES EDUCATIONAL PROGRAMS. Washington: American Council on Education, 1948. Pp. xv + 214. \$3.00.

"The Woman's Collection: A Bibliography of Materials in All Matters Pertaining to Women's Interests Added to the Woman's College Library of the University of North Carolina, 1934-1943. 1947 Supplement." Compiled by MINNIE MIDDLETON HUSSEY. Greensboro: Woman's College of the University of North Carolina, 1948. Pp. 52. (Mimeographed.) Distributed gratis to purchasers of the original volume.

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